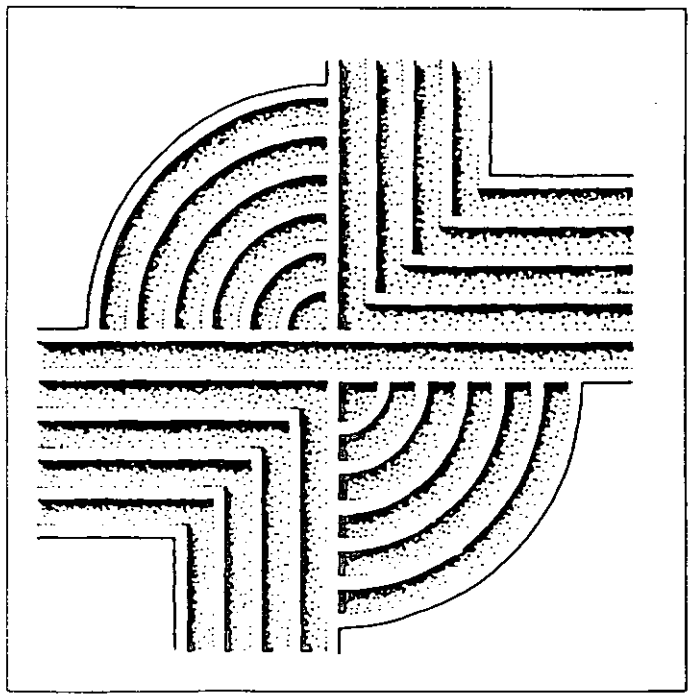
ARCHAEOLOGICAL TESTING OF 38RD1082, KIVA CONSTRUCTION PROJECT, RICHLAND COUNTY, SOUTH CAROLINA



CHICORA RESEARCH CONTRIBUTION 232

ARCHAEOLOGICAL TESTING OF 38RD1082, KIVA CONSTRUCTION PROJECT, RICHLAND COUNTY, SOUTH CAROLINA

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ABSTRACT

This study reports on archaeological testing at 38RD1082. This site was first reported as a scatter of lithic materials encountered during construction of two concrete pads for apartment units. Situated north of the City of Columbia, just outside Blythewood, the site was found on a ridge nose currently wooded in mixed hardwoods and pines.

An archaeological survey of the site revealed a large quantity of artifacts, at least some of which were reported to be found at depths of nearly 2.6 feet below grade. This survey consisted of the excavation of 13 shovel tests. The site was found to measure about 165 by 500 feet and lithic materials were recovered spanning the Archaic Period. Several sherds, representative of the Woodland, were also recovered, although this component seemed much less well defined.

As a result of the initial survey, the site was evaluated as potentially eligible for inclusion on the National Register of Historic Places. Additional testing was recommended by the consultant performing the initial survey.

Chicora Foundation was retained to conduct additional testing of the site, which after consultation with the State Historic Preservation Office was limited to two 5-foot units, one in each pad area, and four 2-foot units, placed in the posited site core. Each test was excavated by a combination of natural stratigraphy and arbitrary 0.5 foot levels.

These tests revealed the presence of Early Archaic (Taylor), Middle Archaic (Morrow Mountain), Late Archaic (Savannah River Stemmed and Small Savannah River Stemmed), and Woodland (Yadkin pottery) materials. The excavations, however, revealed that all materials were confined primarily to the upper 1.5 feet. When materials were found deeper they were almost always associated with clearly visible tree stains or other disturbances. No vertical stratigraphy was apparent in this work, with both Early Archaic and Late Archaic materials co-occurring in the same zone of dense remains. Horizontal stratigraphy, while difficult to conclusively identify in the testing, is possible. The investigations, however, failed to identify any features and no concentrations of materials were identified in the units excavated. Faunal material is present only as small fragments of calcined bone. Ethnobotanical material, while present, is widely dispersed and lacks clear cultural contexts.

The presence of a number of worked specimens, as well as abundant secondary and tertiary flakes, suggests that the site may represent the loci of repeated encampments. There is little indication of primary reduction, although resharpening and tool maintenance activities seem common.

The investigation of the site also explored the disturbance which had already occurred, as well as the additional activities anticipated at the construction site. Although there has been considerable earth movement throughout the 1.5 acre area, cut and fill areas appear about equal in volume, although the fill covers a greater surface area. Even in the cut areas there appear to be intact cultural remains, although they do occur higher in the profile.

The proposed construction activities are limited to the excavation of a 6-inch electrical service line, a 6-inch water line, and the placement of waste lines to a septic field (which is to located off the site). As a result, additional damage to the site is expected to be limited and well-defined.

The materials present at the site do not appear to support the site's eligibility for inclusion on the National Register of Historic Places. The absence of vertical stratigraphy, the uncertainty of horizontal stratigraphy, the failure to identify

features, the absence of culturally affiliated ethnobotanical remains, and the highly mineralized nature of the small quantities of faunal material all suggest that data sets at the site are limited and not likely to be able to address significant research questions.

It also appears that the proposed activities will have minimal impact on the data sets which are present. Further, the testing conducted at the site has obtained an excellent sample of those materials for comparison to other fall line Archaic sites.

As a result, no additional management activities are recommended at 38RD1082. There is, of course, the possibility that additional resources will be identified during construction. Crews should be made aware that if pottery, arrowheads, concentrations of bricks, or the presence of bones are found in the project area, ground disturbing work should be suspended until the finds can be assessed by either the project archaeologist or the State Historic Preservation Office.

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ACKNOWLEDGMENTS

I want to thank Mr. Dan Ligon for his assistance during the course of this project. He showed what can only be described as exceptional interest in the archaeological resources of the project area, first halting his project, calling the site to the attention of the archaeological community, and then patiently waiting as the site was explored in two different stages over the course of several months. We realize that these delays cost money and we are very appreciative of his continued patience and support.

Likewise it is important to thank the staff of the Mental Health Association in South Carolina, whose clients will ultimately use the housing, both for their interest and also patience as the work progressed. We also want to thank those responsible for overseeing the work at the S.C. Housing Authority, as well as the U.S. Department of Housing and Urban Development, who have funded the project.

Mr. Keith Derting, at the S.C. Institute of Archaeology and Anthropology assisted us with site recordation, especially sorting out previously recorded site data. We thank him for his speedy and thorough work. Ms. Sharon Pekrul was responsible for assisting us with curation at the S.C. Institute of Archaeology and Anthropology, and again we offer our sincere appreciation for her time and efforts. Dr. Jonathan Leader was very kind to share his insight concerning the site and evaluation of its potential significance. Finally, Mr. Niels Taylor, staff archaeologist with the State Historic Preservation Office, oversaw the review of the project in that office and provided considerable time and effort to go over the site data and explore different options and techniques that were both appropriate for the resources and also fair to the developer of the property.

The field crew for this project was Ms. Kerri Barile and Ms. Debi Hacker. I appreciate their hard work and efforts to ensure that the site received the level of investigation that it so richly deserved. I also appreciate the efforts of Ms. Barile and Ms. Rachel Campo, who were responsible for cataloging the collection under the supervision of Ms. Hacker. The initial field map was draft by Ms. Barile and was transformed into the computer generated graphic by Ms. Hacker. All of these efforts, absolutely essential to the production of this study, are appreciated.

INTRODUCTION

Background

Archaeological site 38RD1082 is situated in northern Richland County about 15 miles north of Columbia and about 3 miles east of Blythewood (Figure 1). It is found on a northeast–southwest oriented ridge nose that is today lightly forested in pines and mixed hardwoods. The topography slopes steeply to the north, east and west, while the nose continues to the south.

The archaeological site was first recognized by Mr. Dan Ligon after the project area had been graded in preparation for the placement of two concrete slabs for the construction of two apartment-like residential units for the Mental Heal Association in South Carolina. The proposed development, situated on the crest of the ridge nose, incorporates an area of about an acre on a parcel totalling about 1.5 acres. The two apartments, constructed on slabs, will be served by a well to the north. Underground electrical connections will also be routed from the north. A septic tank and drainage field will be situated to the east, downslope from the ridge crest. Although there will be a number of land altering activities on the site, they are well defined and the initial activity, of grading, was the most destructive.

Mr. Ligon collected a large quantity of flakes and other materials and reported the site to the S.C. Institute of Archaeology and Anthropology (SCIAA). Dr. Jonathan Leader, Deputy State Archaeologist with SCIAA visited the site on August 28. Dr. Leader's site form reporting that visit mentions that artifacts, primarily flakes, had been "smeared across the site by the grader," but that the site core was likely in the vicinity of the "southwestern cement pad area" (38RD1082 site form, S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia).

Dr. Leader notified the S.C. State Historic Preservation Office (SHPO) of the site and it was determined that the project involved federal funding from the U.S. Department of Housing and Urban Development, administered through the S.C. Housing Authority. Somehow, during the initial project review, no comments were offered concerning this project and, as a result, there had been no Section 106 survey to identify archaeological and historical resources in the project area.

The SHPO recommended that the immediate site area be subjected to a site survey in order to determine site boundaries and also, if possible, to determine the eligibility of the remains. A decision was made to treat 38RD1082 essentially as a late discovery. Throughout the review construction activities at the project site, known as the Kiva Apartments, have been suspended.

Our colleagues at AF Consultants were awarded a contract to perform the initial survey of the site, which was conducted on September 17. A management summary was issued by AF Consultants on September 29, with a formal report prepared by October 22 (Drucker 1997). That study, discussed in greater detail in a following section, consisted of 13 shovel tests. The study reported the site as potentially eligible, but recommended additional investigations.

Ligon and Associates, which was coordinating the archaeological survey efforts for the S.C. Housing Authority then contacted Chicora Foundation, requesting that we provide a proposal for testing at 38RD1082. Using the available management summary, we prepared a proposal for limited testing, dated October 6, 1997. That proposal was approved on October 8.

These investigations incorporated a review of the site files at the South Carolina Institute of Archaeology and Anthropology. Although a number of sites are reported for the general area,

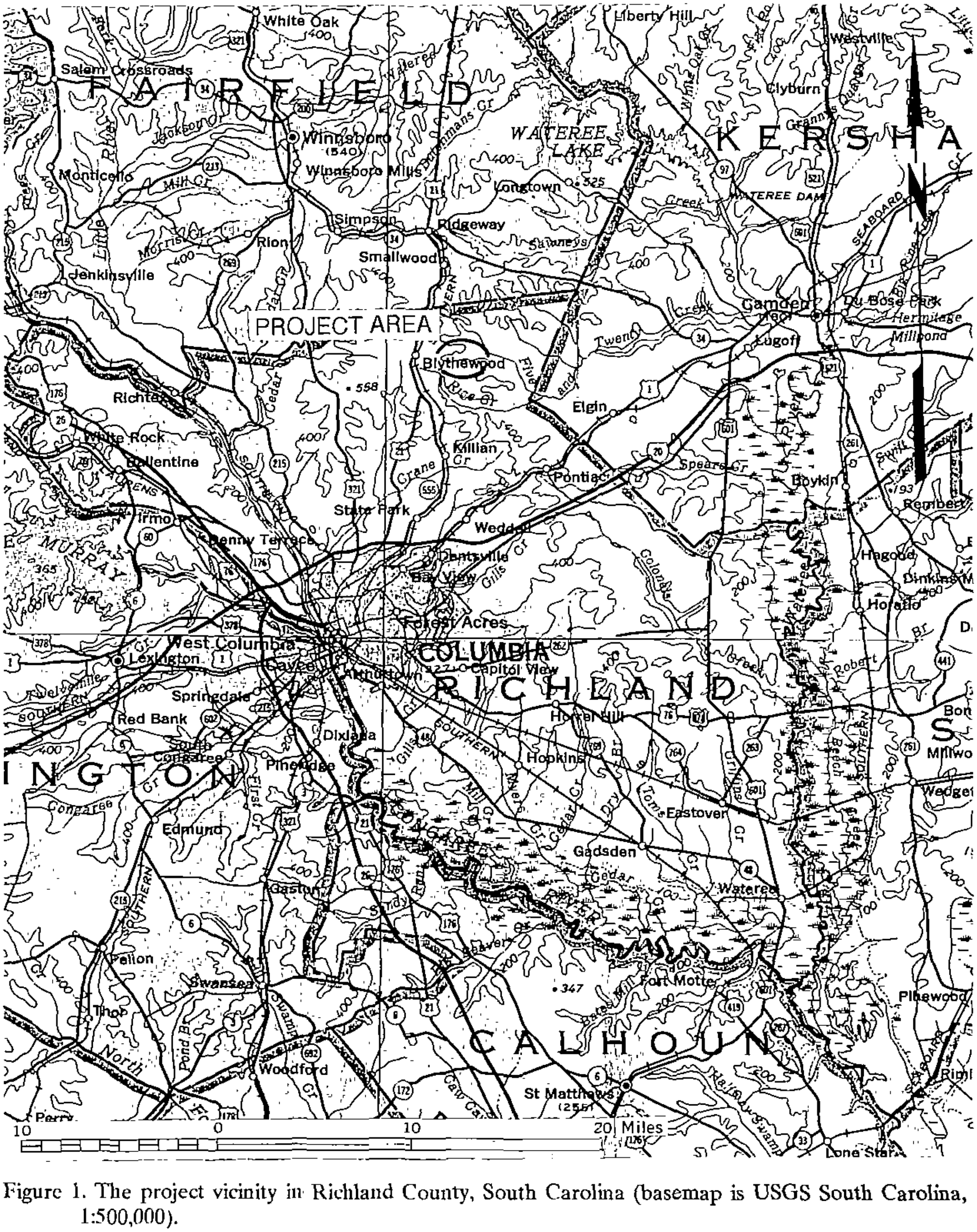

Figure 1. The project vicinity in Richland County, South Carolina (basemap is USGS South Carolina, 1:500,000).

only 38RD1082 has been recorded on the project tract. Given the extensive involvement by the SHPO on this project, no request was made for a review of the master topographic maps at their office to locate any NRHP buildings, districts, structures, sites, or objects in the study area, or for the results of any structural surveys which may have been undertaken in the project vicinity. We do understand, however, that such a check was requested by AF Consultants prior to their survey of the site.

The site tests at 38RD1082 were conducted on October 10 and 11, 1997. The principal investigator and field director for the work was Dr. Michael Trinkley and the field crew included Ms. Kerri Barile and Ms. Debi Hacker. A total of 32 person hours were required for this investigation.

The analysis and cataloging of the collections was conducted by Ms. Kerri Barile and Ms. Rachel Campo under the supervision of Ms. Debi Hacker at Chicora's Columbia laboratories between October 15 and 22. During this work all materials were evaluated for conservation needs. No materials were found which warranted conservation treatments. Additional information concerning curation is available at the end of this section.

Goals and Methods

The primary goal of this study was to assess the ability of 38RD1082 to contribute significant archaeological, historical, or anthropological data. This essentially involves the site's eligibility for inclusion on the National Register of Historic Places, although Chicora Foundation only provides an opinion of National Register eligibility, with the final determination being made by the lead federal agency in consultation with the State Historic Preservation Officer (SHPO) at the South Carolina Department of Archives and History.

Our site testing program was based on the information available to us in the September 29 management summary of the initial survey provided by AF Consultants. It was not possible, during the preparation of our testing plan or its implementation, to obtain a copy of the artifact catalog associated with the initial survey. As a result, we located our tests and designed our strategy solely on the information available in the management plan.

In addition, our testing focused solely on the site's ability to address significant research questions. We did not address issues of site boundaries; those provided by the initial survey were essentially accepted. Although there are some questions regarding site boundary determinations, especially to the east and south, we believe that those to the north and west are relatively sound and are supported by the information collected in this study.

The investigations at 38RD1082 consisted of the placement of a single 5-foot unit on each of the two concrete pad areas. The goal of these two excavations was to evaluate the nature of archaeological materials directly associated with the pads since these areas would be sealed under concrete should the project proceed as planned. Within the individual pads both were placed to maximize artifact recovery by focusing on upslope areas. In the northern pad we placed the unit in the southern half of the pad area, since the original survey noted that the site density decreased to the north. In the southern pad, thought to be in the site core, we focused on a relatively undisturbed area.

These units were excavated using both natural soil zones and arbitrary levels, with all soil being screened through ¼-inch mesh. The units were oriented north-south and were tied into an overall site map prepared during the course of our work. This map not only served to maintain horizonal control over the units, but also helps document the north and west site boundaries, providing considerably more data than the 7.5' USGS topographic map of the site area (Figure 2).

A series of four additional 2-foot units were excavated in non-pad areas. One was placed to the west of the southern pad. Another was placed south of this pad, and two were placed to the east of the southern pad. No pretence of

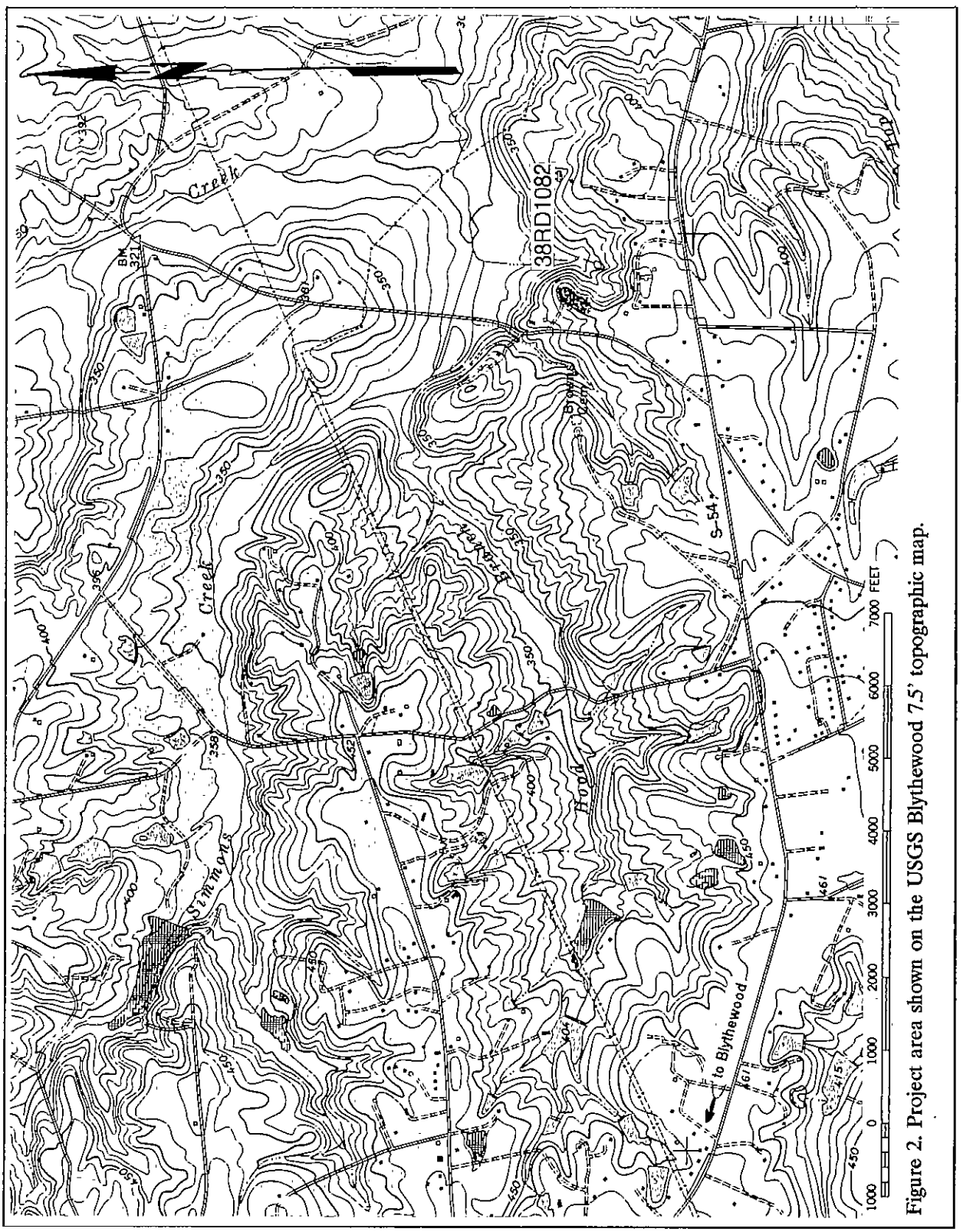

Figure 2. Project area shown on the USGS Blythewood 7.5' topographic map.

random placement is made — all were laid in to maximize site data.

Notes were retained on all of the units and photographs were taken of individual tests if warranted in the opinion of the field director. At the conclusion of the investigations a revised Site Inventory Record was prepared and submitted to the South Carolina Institute of Archaeology and Anthropology.

The site assessment process follows that outlined by Townsend et al. (1993) in *National Register Bulletin* 36. While intended for use with historic sites, we have found that the process is equally well suited to prehistoric resources. This evaluative processes involves five steps, forming a clearly defined, explicit rationale for either the site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as artifacts, subsistence remains, architectural remains, or sub-surface features;

- identification of the historic context applicable to the site, providing a framework for the evaluative process;

- identification of the important research questions the site *might* be able to address, given the data sets and the context;

- evaluation of the site's archaeological integrity to ensure that the data sets are sufficiently well preserved to address the research questions; and

- identification of "important" research questions among all of those which might be asked and answered at the site.

Taking each of these steps individually, the first is simply to determine what is present at the site — for example, are features present, what types of artifacts are present, from what period does the site date? This represents the collection of basic, and essential, information concerning the site and the types of research contributions it can offer. Obviously there is no reason to propose research on Early Archaic lithic resource selection if only Middle or Late Archaic diagnostic materials are present. Nor is it perhaps appropriate to explore questions focused on subsistence if no faunal materials are present in the collection. This first step is typically addressed through the survey investigations, although in this case it was felt that additional site testing was appropriate.

Next, it is important to understand the historic context of the site — what is the prehistory of the project area and of the specific locality? Research questions must be posed with an understanding of this context and the context helps to direct the focus of research. The development of a historic context can be a lengthy process. Fortunately, there are two very valuable documents which provide an appropriate context. One is *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective* (Anderson et al. 1992). The other is *Middle and Late Archaic Archaeological Records of South Carolina: A Synthesis for Research and Resource Management* (Sassaman and Anderson 1994). These documents, prepared by the Council of South Carolina Professional Archaeologists using funding provided by the SHPO provide appropriate contexts for National Register evaluations.

Associated with the development of the context is the formation of research questions ***applicable to the site, its context, and its data sets.*** Often this research will grow out of previous projects in the area. Again, the Sassaman and Anderson (1994) volume provides specific guidance appropriate for the development of significant research questions.

Next it is essential to compare the data sets with the research questions — the information necessary to address the research questions must

be present at the site, else posing the question is meaningless in the evaluative process. Focusing on small projects, it may be more appropriate to concentrate on only one or perhaps two research questions and devote the energy necessary to fully explore them, then to propose a range of questions which can be only superficially explored with the data sets or resources available.

Finally, Townsend et al. recognize that not all research questions are of equal importance and that only those of fairly high value should be considered in the evaluation of National Register eligibility. Of all the steps this may be the most difficult to address. Some research questions proposed may seem pedestrian. Many may seem to have relatively little relevance to the average person or school-child in South Carolina. However, all of the information collected should focus back on the ultimate goal of better explicating how prehistoric people lived and providing an opportunity to understand lifeways that would otherwise be totally unaccessible.

This approach, of course, has been developed for use documenting eligibility of sites actually being nominated to the National Register of Historic Places. Its explicit approach, however, can be just as useful to document that a site is *not* eligible.

Curation

An updated archaeological site form has been filed with the South Carolina Institute of Archaeology and Anthropology. The field notes and artifacts resulting from these investigations will be curated with that institution using their proveniencing system which consists of site number-site provenience number- artifact number.

All original records and duplicate copies were provided to the institution on pH neutral, alkaline buffered permanent paper. The artifacts are housed in ziplock bags with pH neutral, alkaline buffered tags. Photographic materials, which consist only of color prints, are not archivally stable and have therefore been retained in Chicora's project files.

NATURAL ENVIRONMENT

Physiographic Province

The project area is situated in the northeastern corner of Richland County on a substantial ridgetop overlooking small, unnamed drainages to the east and west. These creeks flow north into the drainage formed by the confluence of Hood Branch and Simmons Creek. Combined, they join Twentyfive Mile Creek which originates to the north and then flows eastward into neighboring Kershaw County (Figures 1 and 2).

Richland County, situated in the approximate center of South Carolina, is bounded to the southwest by the Congaree River, to the southeast by the Wateree River, to the northeast by Kershaw County, to the north by Fairfield County, as well as sections of both Cedar Creek and the Broad River, and to the northwest by Lexington County.

Lake Murray, which forms a portion of the county's northwestern boundary, was created by flooding a portion of the Saluda River and was completed in December 1930 by the Lexington Water Power Company. When originally constructed it boasted the largest high earth dam in the world, and the waters it backed up was the largest power reservoir in the United States (Wallace 1951:689-690). Although South Carolinians often claim a love for their heritage, no archaeological, or historical, research was conducted prior to the construction of this facility. In fact, many of the original family cemeteries still lie unrecorded at the bottom of Lake Murray.

The county is located within two distinct physiographic provinces — the Piedmont Plateau and the Atlantic Coastal Plain. The northern half of the coastal plain is known as the Sand Hills. About a third of Richland County is found within the Piedmont, separated from the coastal plain by an irregular line, known as the Fall Line, that extends north from the vicinity of Columbia and runs west of US 21 to Blythewood. From Blythewood the Fall Line continues southeast, passing through the project vicinity and entering Kershaw County at the confluence of Twentyfive Mile Creek and Rice Creek.

The project area is technically in the Carolina Sand Hills, an area of discontinuous hilly topography characterized by rounded hills with gentle slopes, moderate relief, and sandy soils. Although technically part of the Coastal Plain geology, the Sand Hills are distinct geographically. Much of the sand was blown into dunes during the Miocene, although weathered clays and very old river deposits are also present. In many cases these sandy deposits lie directly on the crystalline rocks of the Piedmont (Kovacik and Winberry 1987; Murphy 1995).

The area of 38RD1082, therefore, is in close contact with a range of physiographic regions. To the north are the dissected plains consisting of the hills and valleys cut by creeks and rivers as they flow toward the coastal plain. Possibly part of the peneplain, the Piedmont is characterized by the dendritic stream patterns. It is also characterized by a range of metavolcanic, quartz, and quartzite materials used by Native Americans for stone tools. To the south is the Coastal Plain, where the topography changes dramatically, the hilly upper Coastal Plain giving way to the broad expanses of relatively flat, level ground associated with the lower Coastal Plain. These areas provide sources for Coastal Plain cherts, also used extensively for tool manufacture.

In the project area the elevations range from about 300 to 450 feet above mean sea level (AMSL). The ridge nose on which 38RD1082 is found has an elevation of about 400 feet AMSL, with fairly steep slopes to the east and west. A small drainage is found about 500 feet to the east, while another is situated about 900 feet to the west. In both cases the creeks are at elevations of

about 350 feet, or nearly 50 feet lower than the ridgetop.

Geology and Soils

Most of the rocks of the Piedmont are gneiss and schist, with some marble and quartzite (Hasselton 1974). Some less intensively metamorphosed rocks, such as slate, occur along the eastern part of the province from southern Virginia into Georgia. This area, called the Slate Belt, is characterized by slightly lower ground with wider river valleys. Consequently, the Slate Belt has been favored for reservoir sites (Johnson 1970), as well as prehistoric occupation (see Coe 1964). In Richland County many of the Piedmont soils, such as the Nason-Georgeville unit, are weathered from argillites rich in silica and alumina. Other soils are formed in saprolite that weathered from crystalline rocks and "Carolina slates". Soils from the river floodplains formed in sediment that washed from the uplands of the Piedmont province.

The Sand Hills, as previously mentioned, are characterized by a plain that has generally gentle slopes and elevations of 350 to 500 feet. The soils, like those in the Coastal Plain, are typically unconsolidated marine deposits of light colored sands and kaoline clays. These soils are generally well drained, although some soil series do exhibit fragipans (Lawrence 1978:5).

The project area is situated on Fuquay sands, typical of the soils found on narrow to broad ridgetops and on narrow side slopes. As expected, the slopes, typically under 6%, are smooth and well-rounded (Lawrence 1978:Map 10). These soils have an Ap horizon of grayish brown (2.5Y5/2) sand to a depth of about 0.7 foot, although soil colors may include browns, grays, or dark grays. This overlies a A2 horizon of light yellowish brown (10YR6/4) sand to a depth of about 2.9 feet. The A2 horizon may also exhibit soil colors of pale brown, light olive brown, light yellowish brown, or brownish yellow. Below are a series of B horizon soils, usually a yellowish brown (10YR5/6) or occasionally strong brown sandy clay loam (Lawrence 1978:46-47).

Examination of aerial photographs for the project area reveal that it has a varied land use history. The earliest available photographs, taken in 1939, reveal very open woods, suggestive of recent logging (ATA-14-34, Map Repository, Thomas Cooper Library, University of South Carolina). By 1943 the site area was being cultivated and is shown as recently cultivated fields (ATA-5C-108, Map Repository, Thomas Cooper Library, University of South Carolina). This continued through 1951, although by 1955 the site area had been allowed to return to woods (ATA-2P-134, Map Repository, Thomas Cooper Library, University of South Carolina). This condition remains stable through the aerials for 1959, 1966, 1970, and 1981.

This suggests that the site area has probably gone through cycles of soil erosion and deposition, with erosion occurring during logging and cultivation, while soils likely built up during periods of forestation. In fact, the 1934 South Carolina Erosion Survey by M.W. Lowry found that this portion of Richland County exhibited severe sheet erosion with occasional gullies (Lowry 1934). Although Richland County was not included in Stanley Trimble's erosion study of the Southern Piedmont, Fairfield County, within only a few miles of the project area, was reported to have lost over a foot of soil through erosion in the nineteenth and early twentieth centuries (Trimble 1974:3). It is part of the area classified by Trimble as having high antebellum erosion land use with postbellum continuation and belonging to his Region III — the Cotton Plantation Area (Trimble 1974:15).

Furthermore, logging in the Carolina Sand Hills will result in the loss of nearly 0.15 tons of soil per acre per year and mechanical site preparation, perhaps used in the mid-1950s to convert the agricultural fields back to woods, might have resulted in the loss of over 1 ton of soil per acre per year (U.S. Department of Agriculture 1983:25).

In 1826 Robert Mills provided very long and detailed descriptions of the different soils typical of Richland County. In the "upper part of the district" he mentions four different classes of

lands. Least valuable are those he described as the "sand hills." About these he commented that the "uniform character . . . is so well known as to render a description useless." Regardless, he went on to explain:

> The term sand hills conveys an adequate idea of their sterility and barrenness, and of the composition and nature of the soil. It is particularly adapted to the growth of pease and esculent roots (Mills 1826:696).

The area of 38RD1082, however, might have fallen into Mills' "Third class — second quality of oak and hickory land." These included sandy loams which lacked an underlying clay stratum. While "soon impoverished and exhausted," these lands were particularly suited to "Indian corn, pease, and esculent roots" (Mills 1826:696).

Mills, like for other districts, expressed his concern over the treatment lands received in Richland District. Less than 20 years later Edmund Ruffin had a similar opinion of the sand hills and the wasteful cultivation of the land, yet it seems to have had little impact on the planters he met. He observed that:

> The lands through Richland, of middling quality, or rather below. Surface moderately undulating, & sandy mostly. Oak growth more in proportion to the pine than lower. No very good culture or land seen by me (Mathew 1992:261).

In spite of these early warnings, the South Carolina Department of Agriculture, Commerce, and Immigration, as late as 1907, found no reason to remark on the threat of erosion, noting only that "elevated flats can be brought to a high state of fertility by proper methods of farming" and that the soils are "superior for peanuts, sweet potatoes, sorghum, watermelons and the staples, oats, cotton, corn, and some wheat" (State Department of Agriculture, Commerce, and Immigration 1907:255). Richland County boasted of three cotton seed oil mills — far more than the single mills operating in surrounding Fairfield, Kershaw, or Sumter counties (State Department of Agriculture, Commerce, and Immigration 1907:269, 288).

Climate

Elevation, latitude, and distance from the coast work together to affect the climate of South Carolina, including the Sand Hills. In addition, the more westerly mountains block or moderate many of the cold air masses that flow across the state from west to east. Even the very cold air masses which cross the mountains are warmed somewhat by compression before they descend on the Piedmont and adjacent Sand Hills.

Consequently, the climate of Richland County is temperate. The winters are relatively mild and the summers warm and humid. Rainfall in the amount of about 46 inches is adequate, although less than in some neighboring counties. About 27 inches of rain occur during the growing season, with periods of drought not uncommon during the summer months. As Hilliard illustrates, these droughts tended to be localized and tended to occur several years in a row, increasing the hardship on those attempting to recover from the previous year's crop failure (Hilliard 1984:16). Perhaps the best wide-scale example of this was the drought of 1845, which caused a series of very serious grain and food shortages throughout the state.

The average growing season is about 232 days, although early freezes in the fall and late frosts in the spring can reduce this period by as much as 30 or more days (Lawrence 1978:73). Consequently, most cotton planting, for example, did not take place until early May, avoiding the possibility that a late frost would damage the young seedlings.

Floristics

Piedmont forests generally belong to the Oak-Hickory Formation as established by Braun (1950), while she classifies the Sand Hills as part of the Southeast Evergreen Forest Region.

Figure 3. View of open forests on the western slope of the site area, view to the southeast.

Figure 4. Area on the ridgetop cleared of vegetation and concrete pads laid out. View is to the north.

Regardless, the potential natural vegetation of the project area is the Oak-Hickory-Pine forest, composed of medium tall to tall forests of broadlead deciduous and needleleaf evergreen trees (Küchler 1964). The major components of this ecosystem include hickory, shortleaf pine, loblolly pine, white oak, and post oak.

Although John Berry rightly comments that "a walk through the most xeric stages of the fall line sandhills would probably be very boring" dominated by turkey oaks, scrubby post oaks, and broad expanses of open sandy soil, there are other econiches. For example, on the more mesic soils pines and mixed hardwoods can be common, dominated by loblolly pines, cedars, southern red oaks, and even pignut and mockernut hickories. In these mesic woods the understory includes dogwoods, sassafras, blackgum, and persimmon (Berry 1980: 103, 114-115). In fact, this is what is seen today in the site area (Figure 3). There, open woods dominate where the vegetation hasn't been removed for the apartment complexes (Figure 4).

The site area also exhibits considerable ecological diversity. Within 0.2 mile of the site there are several intermittent creeks associated with such trees as pond pine, red maple, and sweet bay. There are shrub layers that are very attractive to a diverse range of mammals, including deer, opossum, and raccoon.

It is this diversity which probably made the project area attractive to Native Americans, who saw the site area as providing a range of different environmental zones in close proximity, not a "boring" or sterile sand wasteland (which admittedly is more typical of some sand hill areas).

Prehistoric Environment

A reconstruction of paleoenvironmental features has gradually emerged within the past several decades and is based on the work of Whitehead (1965, 1967, 1972, 1973) and Watts (1970, 1975, 1980). Unfortunately, our understanding of environmental change is general and is based almost entirely on pollen analysis of lake sediments and buried organic layers situated in Piedmont areas outside South Carolina. The pollen studies give evidence of vegetational changes which in turn provide suggestions concerning climatic change. These studies can be important to the archaeologist because they allow inferences to be drawn on the nature of the cultural-environmental interactions, such as the adaptive shifts human populations made to counter ecological shifts. It is recognized that these inferences must be based on the paleoenvironment, not the extant environment.

Based largely on work from southeastern Virginia and North Carolina, Whitehead (1965) has employed a tripartite division of the preceding 25,000 years: Full Glacial (25,000 - 15,000 B.P.), Late Glacial (15,000 - 10,000 B.P.), and Post-Glacial or Holocene (10,000 B.P. - present).

During the Full Glacial the Coastal Plain was boreal, although he vegetation was sparse, which suggests a relatively dry climate. Voorhies (1974), based on a paleontological assemblage from east-central Georgia, suggests a cool, moist climate instead. Watts' (1980) work from White Pond at the edge of the Inner Coastal Plain, found jack pine, red spruce, and herbs, which appear to reflect a boreal forest climate. During the Late Glacial period there was a gradual change to a hemlock-northern hardwoods forest type and eventually to a modern condition. From White Pond, Watts (1980) identified a forest dominated by oak, hickory, beech, and ironwood and interprets this assemblage as a mesic deciduous forest typical of a cool and moist environment.

The mesic deciduous forest began to change early in the Holocene and was replaced by a more xeric forest comprised of modern flora. Again from White Pond, Watts (1980) notes the rapid loss of hickory, beech, and ironwood after 9,500 B.P. with the equally rapid rise of southern pine species. The oak species remain, and sweet gum and tupelo are found. For a brief synopsis of the environmental changes occurring around 10,000 B.P. the discussion by Anderson and O'Steen (1992:3) is particularly useful, especially since it recognizes the different zones within South Carolina.

An essentially modern flora is postulated

by Whitehead (1965) and Watts (1971) by 5,000 B.P. with the spread of oak-hickory forests. But this, however, fails to recognize the extraordinary importance of the changes occurring during this period. As Sassaman and Anderson note:

> the period of mid-Holocene global warming referred to variously as the Altithermal, Hypsithermal, and Climatic Optimum *is* the Middle Archaic Period, as its effects on vegetation and fauna are considered to be so dramatic that they completely reconfigured patterns of human settlement, subsistence, social relations, and technology (Sassaman and Anderson 1994:6).

Unfortunately, as Sassaman and Anderson note, there are relatively few data available for South Carolina and the situation, even now, is far from clear. In fact, while there are mounting data arguing for dramatic changes in the American Midwest, the evidence from the Southeast is, at best, ambiguous. Sassaman and Anderson (1994:7-12) review the available data without arriving at any widely accepted consensus.

When the palynological data are explored, there is evidence that pines advanced in the Coastal Plain, but may have been held back, at least to some degree, in the Piedmont. This spread of pine, it seems, may be associated with the shift of Middle Archaic populations into the upper portions of the state, or at least helped focus attention on "oases of hydric and mesic communities" (Sassaman and Anderson 1994:10).

If geological and soils evidence is examined, there seem to be two focused camps — those arguing that in general South Carolina was fairly moist and those who see cycles of limited moisture followed chronic dry conditions. Although there are too few data to support one proposition over the other, acceptance of cycling might help explain a broad range of site conditions. Erosion seen in the geological record may be from either periods of wet weather or from dry conditions with the denuding of the landscape. Regardless, these erosional periods may explain at least some of the Middle Archaic stratigraphic profiles.

PREHISTORIC SYNOPSIS

Prehistoric Overview

Overviews for South Carolina's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared. There are, in addition, some "classic" sources well worth attention, such as Joffre Coe's *Formative Cultures* (Coe 1964), as well as some new general overviews (such as Sassaman et al. 1990 and Goodyear and Hanson 1989). Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic and by Anderson et al. (1992) for the Paleoindian and Early Archaic. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the study areas. For those desiring a more general synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), *Archaeology of the Southeastern United States: Paleoindian to World War I.* Figure 19 offers a generalized view of South Carolina's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points, side scrapers, end scrapers; and drills (Coe 1964; Michie 1977; Williams 1965). Oliver (1981, 1985) has proposed to extend the Paleoindian dating in the North Carolina Piedmont to perhaps as early as 14,000 B.P., incorporating the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, as representatives of the terminal phase. This view, verbally suggested by Coe for a number of years, has considerable technological appeal.[1] Oliver suggests a continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Side-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted.

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is somewhat dated, but has been summarized by Charles and Michie 1992). They reveal a widespread distribution across the state (see also Anderson 1992b:Figure 5.1) with at least several concentrations relating to intensity of collector activity. What is clear is that points are found fairly far removed from the origin of the raw material. Charles and Miche suggest that this may "imply a geographically extensive settlement system" (Charles and Michie 1992:247).

Although data are sparse, one of the more attractive theories that explains the widespread distribution of Paleoindian sites is the model tracking the replacement of a high technology forager (or HTF) adaptation by a "progressively more generalized band/microband foraging

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[1] While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

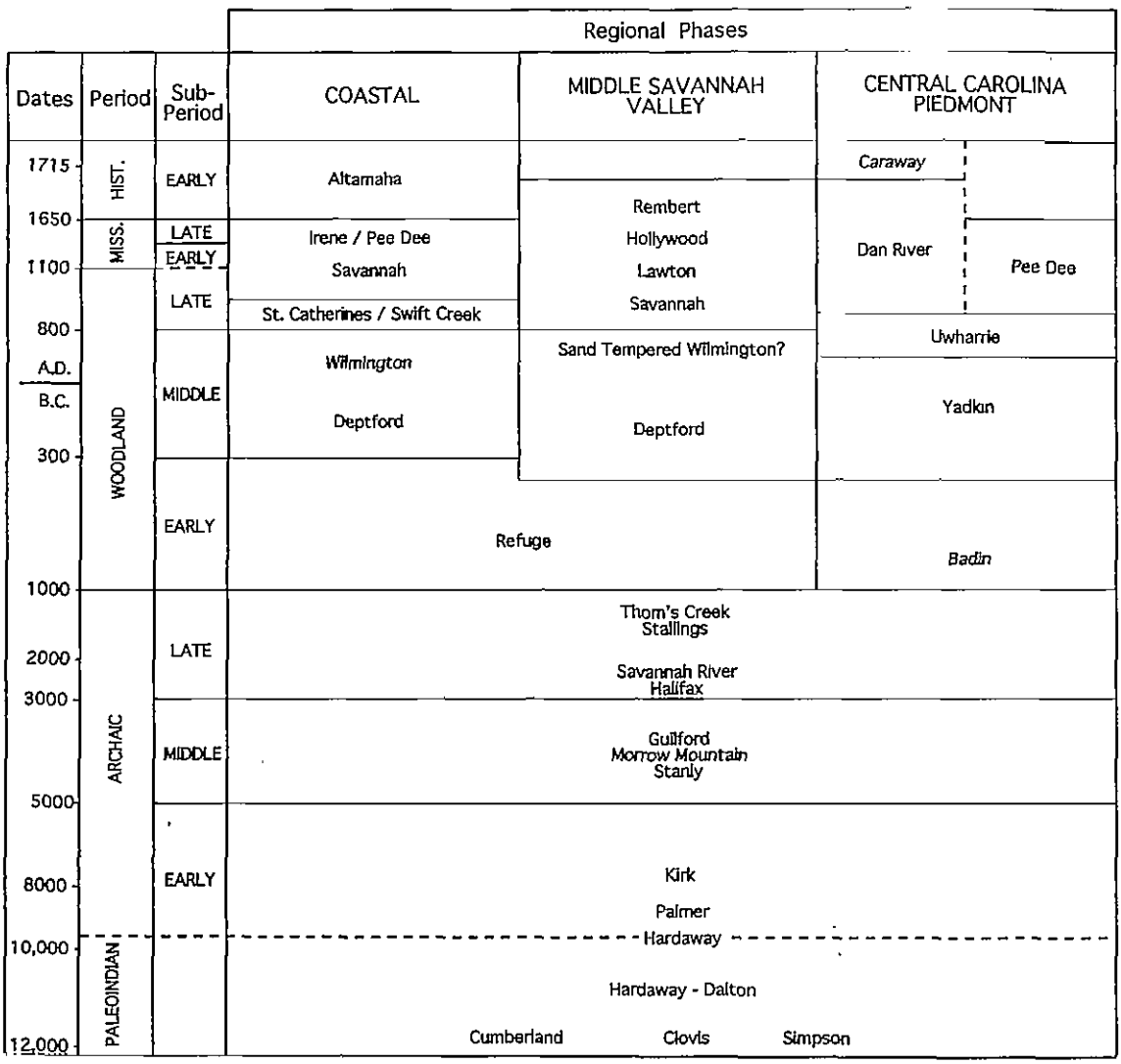

Figure 5. A generalized cultural sequence for South Carolina (partially adapted from Coe 1964:Figure 116).

adaption" accompanied by increasingly distinct regional traditions (perhaps reflecting movement either along or perhaps even between river drainages) (Anderson 1992b:46).

Distinctive projectile points include lanceolates such as Clovis, Dalton, perhaps the Hardaway, and Big Sandy (Coe 1964; Phelps 1983; Oliver 1985). A temporal sequence of Paleoindian projectile points was proposed by Williams (1965:24-51), but according to Phelps (1983:18) there is little stratigraphic or chronometric evidence for it. While this is certainly true, a number of authors, such as Anderson (1992a) and Oliver (1985) have assembled impressive data sets. We are inclined to believe that while often not conclusively proven by stratigraphic excavations (and such proof may be an unreasonable expectation), there is a large body of circumstantial evidence. The weight of this evidence tends to provide considerable support.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992b for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society, were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[2], does not form a sharp break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

Many researchers have reported data suggestive of a noticeable population increase from the Paleoindian into the Early Archaic. This has tentatively been associated with a greater emphasis on foraging. Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies.

Settlements during the Early Archaic suggest the presence of a few very large, and

[2] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether ceramics, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery." While this issue has been of considerable importance along the Carolina and Georgia coasts, it has never affected the Piedmont, which seems to have embraced pottery far later, well into the conventional Woodland period. The importance of the issue in the Sandhills, unfortunately, is not well known.

apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites are thought of as special purpose or foraging sites (see Ward 1983:67).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Stanly and Halifax projectile points. Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrapers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Among the most common of all Middle Woodland artifacts is the Morrow Mountain Stemmed projectile point. Originally divided into two varieties by Coe (1964:37,43) based primarily on the size of the blade and the stem. Morrow Mountain I points had relatively small triangular blades with short, pointed stems. Morrow Mountain II points had longer, narrower blades with long, tapered stems. Coe suggested a temporal sequence from Morrow Mountain I to Morrow Mountain II. While this has been rejected by some archaeologists, who suggest that the differences are entirely related to the life-stage of the point, the debate is far from settled and Coe has considerable support for his scenario.

The Morrow Mountain point is also important in our discussions since it represents a departure from the Carolina Stemmed Tradition. Coe has suggested that the groups responsible for the Middle Archaic Morrow Mountain (and the later Guilford points) were intrusive ("without any background" in Coe's words) into the North Carolina Piedmont, from the west, and were contemporaneous with the groups producing Stanly points (Coe 1964:122-123; see also Phelps 1983:23). Phelps, building on Coe, refers to the Morrow Mountain and Guilford as the "Western Intrusive horizon." Sassaman (1995) has recently proposed a scenario for the Morrow Mountain groups which would support this west-to-east time-transgressive process. Abbott and his colleagues, perhaps unaware of Sassaman's data, dismiss the concept, commenting that the shear distribution and number of these points "makes this position wholly untenable" (Abbott et al. 1995:9).

The controversy surrounding Morrow Mountain also includes its posited date range. Coe (1964:123) did not expect the Morrow Mountain to predate 6500 B.P., yet more recent research in Tennessee reveals a date range of about 7500 to 6500 B.P. Sassaman and Anderson (1994:24) observe that the South Carolina dates have never matched the antiquity of their more western counterparts and suggest continuation to perhaps as late as 5500 B.P. In fact they suggest that even later dates are possible since it can often be difficult to separate Morrow Mountain and Guilford points.

A recently defined point is the MALA. The term is an acronym standing for Middle Archaic and Late Archaic, the strata in which these points were first encountered at the Pen Point site (38BR383) in Barnwell County, South Carolina (Sassaman 1985). These stemmed and notched lanceolate points were originally found in a context suggesting a single-episode event with variation not based on temporal variation. The original discussion was explicitly worded to avoid application of a typology, although as Sassaman

and Anderson (1994:27) note, the "type" has spread into more common usage. There are possible connections with both the Halifax points of North Carolina and the Benton points of the middle Tennessee River valley, while the "heartland" for the MALA appears confined to the lower middle Coastal Plain of South Carolina.

The available information has resulted in a variety of competing settlement models. Some argue for increased sedentism and a reduction of mobility (see Goodyear et al. 1979:111). Ward argues that the most appropriate model is one which includes relatively stable and sedentary hunters and gatherers "primarily adapted to the varied and rich resource base offered by the major alluvial valleys" (Ward 1983:69). While he recognizes the presence of "inter-riverine" sites, he discounts explanations which focus on seasonal rounds, suggesting "alternative explanations . . . [including] a wide range of adaptive responses." Most importantly, he notes that:

> the seasonal transhumance model and the sedentary model are opposite ends of a continuum, and in all likelihood variations on these two themes probably existed in different regions at different times throughout the Archaic period (Ward 1983:69).

Others suggest increased mobility during the Archaic (see Cable 1982). Sassaman (1983) has suggested that the Morrow Mountain phase people had a great deal of residential mobility, based on the variety of environmental zones they are found in and the lack of site diversity. The high level of mobility, coupled with the rapid replacement of these points, may help explain the seemingly large numbers of sites with Middle Archaic assemblages. Curiously, the later Guilford phase sites are not as widely distributed, perhaps suggesting that only certain micro-environments were used (cf. Ward [1983:68-69] who would likely reject the notion that substantially different environmental zones are, in fact, represented).

Recently Abbott et al. argue for a combination of these models, noting that the almost certain increase in population levels probably resulted in a contraction of local territories. With small territories there would have been significantly greater pressure to successfully exploit the limited resources by more frequent movement of camps. They discount the idea that these territories could have been exploited from a single base camp without horticultural technology. Abbott and his colleagues conclude, "increased residential mobility under such conditions may in fact represent a common stage in the development of sedentism" (Abbott et al. 1995:9).

From excavations at a Sandhills site in Chesterfield County, South Carolina, Gunn and his colleague (Gunn and Wilson 1993) offer an alternative model for Middle Archaic settlement. He accepts that the uplands were desiccated from global warming, but rather than limiting occupation, this environmental change made the area more attractive for residential base camps. Gunn and Wilson suggest that the open, or fringe, habitat of the upland margins would have been attractive to a wide variety of plant and animal species.

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued to intensively exploit the uplands much like earlier Archaic groups with, the bulk of our data for this period coming from the Uwharrie region in North Carolina.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44). This innovation is of special importance along the Georgia and South Carolina coasts, but seems to have had only minimal impact in the uplands of South or North Carolina.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Sandhills of South Carolina without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings and Thoms Creek series. These sand tempered Thoms Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976). Also potentially included are Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (Waring 1968). Others would have the Woodland beginning about 3,000 B.P. and perhaps as late as 2,500 B.P. with the introduction of pottery which is cord-marked or fabric-impressed and suggestive of influences from northern cultures.

There remains, in South Carolina, considerable ambiguity regarding the pottery series found in the Sandhills and their association with coastal plain and piedmont types. The earliest pottery found at many sites may be called either Deptford or Yadkin, depending on the research or their inclination at any given moment.

The Deptford phase, which dates from 3050 to 1350 B.P., is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites.

Inland sites such as 38AK228-W, 38LX5, 38RD60, and 38BM40 indicate the presence of an extensive Deptford occupation on the Fall Line and the Inner Coastal Plain/Sand Hills, although sandy, acidic soils preclude statements on the subsistence base (Anderson 1979; Ryan 1972; Trinkley 1980). These interior or upland Deptford sites, however, are strongly associated with the swamp terrace edge, and this environment is productive not only in nut masts, but also in large mammals such as deer. Perhaps the best data concerning Deptford "base camps" comes from the Lewis-West site (38AK228-W), where evidence of abundant food remains, storage pit features, elaborate material culture, mortuary behavior, and craft specialization has been reported (Sassaman et al. 1990:96-98; see also Sassaman 1993 for similar data recovered from 38AK157).

Further to the north and west, in the Piedmont, the Early Woodland is marked by a pottery type defined by Coe (1964:27-29) as Badin.[3] This pottery is identified as having very fine sand in the paste with an occasional pebble. Coe identified cord-marked, fabric-marked, net-impressed, and plain surface finishes. Beyond this pottery little is known about the makers of the Badin wares and relatively few of these sherds are reported from South Carolina sites.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,300 B.P. to 1,200 B.P. In the Piedmont and even into the Sand Hills, the dominant Middle Woodland ceramic type is typically identified as the Yadkin series. Characterized by a crushed quartz temper the pottery includes surface treatments of cord-marked, fabric-marked, and a very few linear check-stamped sherds (Coe 1964:30-32). It is regrettable that several of the seemingly "best" Yadkin sites, such as the Trestle site (31An19) explored by Peter Cooper (Ward 1983:72-73), have never been published.

Yadkin ceramics are associated with medium-sized triangular points, although Oliver (1981) suggests that a continuation of the Piedmont Stemmed Tradition to at least 1650 B.P. coexisted with this Triangular Tradition. The Yadkin in South Carolina has been best explored by research at 38SU83 in Sumter County (Blanton et al. 1986) and at 38FL249 in Florence County (Trinkley et al. 1993)

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of the Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

[3] The ceramics suggest clear regional differences during the Woodland which seem to only be magnified during the later phases. Ward (1983:71), for example, notes that there "marked distinctions" between the pottery from the Buggs Island and Gaston Reservoirs and that from the south-central Piedmont.

Previous Archaeological Studies and Research Orientation

Sassaman and Anderson (1994:53-98) do an admirable job of discussion the key Middle Archaic sites in the South Carolina region and no effort is made to synthesize their discussions. Instead, this discussion will focus entirely on the previous research at 38RD1082 (which has been briefly alluded to in the **Introduction** to this study).

The initial survey of 38RD1082 by AF Consultants was designed "to assess the limits, content, integrity, and NRHP eligibility" of the site. The report of that investigation, however, notes:

> upon arriving at the site, AF Consultants found that the focal construction area and the actual site size were significantly larger and container deeper . . . deposits than originally reported (Drucker 1997:19).

As a result, the strategy of shovel testing at 15 to 30 foot intervals was reduced to testing at 100 to 150 foot intervals. Consequently, a series of 13 shovel tests were excavated.

Shovel Tests 1, 2, 3, and 4 were excavated at 100 foot intervals along a central north-south line. Shovel Test 5 was excavated about 150 feet east of Shovel Test 4 in order to establish a second north-south baseline. It appears, however, that instead of using this baseline the subsequent tests followed the natural topography of the area, with Shovel Tests 6, 7, and 8 extending roughly northward at irregular intervals along the eastern edge of the property. One shovel test (ST 8) was

placed across the county road off the project area. In a similar fashion Shovel Tests 9, 10, 11 were oriented along the western side of the project at 100 foot intervals. Shovel Tests 12 and 13 were intuitively located to explore specific areas of the project (Drucker 1997:19-21).

Drucker summarized this testing, observing that:

> Although percolation and bioturbation appear to have caused some downward shift, artifacts were found to be consistently concentrated within the bottom 5 cm [0.2 foot] of dark brown (10YR4/3) sand plowzone (PZ) and the top 50 cm [1.6 foot] of underlying Zone 2 yellowish brown (10YR5/6) sand. This suggests that the prehistoric ground surface has been covered by several centimeters of colluvium, a process which no doubt has accelerated since the advent of European cultivation in the 1700s (Drucker 1997:21).[4]

Drucker notes that 517 items were collected from the site, including 359 specimens from shovel testing and 158 objects from the surface (Drucker 1997:22). Her analysis, however, reveals only 197 objects from shovel tests and 133 specimens from the surface (Drucker 1997:Table 1). The difference, while sizeable, appears to be fire cracked rock, which was counted to produce the 517 items, but was weighed in the table. A synthesis of the artifacts is provided here as Table 1.

The stratigraphic information is rather nebulous since most of the shovel tests include materials from the "top of Zone 2" with specimens recovered from the plowzone. While large quantities of materials are reported from Zone 2 (where it was separated from the plowzone), there is no information provided on individual test depths. Some degree of skepticism is appropriate since it is very difficult to excavate a shovel test much below 50 cm (1.6 foot) without the shovel scraping materials from the upper stratas into the lower. Such mixing is almost impossible to prevent in shovel tests.

The artifact-specific data, however, however, reveals a strong preference for quartz material and, in fact, no extralocal specimens were recovered. The absence of exotics prompts Drucker to observe that, "overall, the site occupants appear to have used widely available fall line and southern piedmont raw materials" (Drucker 1997:23). Small quantities of both hematite and soapstone were found, although in very small quantities. While not mentioned by Drucker, hematite tends to occur in fairly isolated areas of South Carolina, most typically in the vicinity of Kings Creek and Broad River bordering North Carolina, the area of Anderson and Spartanburg counties, and the vicinity of Abbeville and York counties (State Department of Agriculture, Commerce, and Immigration 1907:119-121). There are also small outcrops in Newberry County, only 30 miles west of 38RD1082 (Murphy 1995:60).

Most of the tools (17 out of 25 or nearly 70%) came from the surface. The recovered projectile points included four Morrow Mountain, one Guilford, two MALA, and five points described simply as "Late Archaic," which we interpret to mean small stemmed points such as the Small Savannah River Stemmed or the Gypsy Stemmed (Oliver 1981). It seems, therefore, that the bulk of the lithics from the site date from the Middle Archaic through the Late Archaic.

Sherds recovered from the site were apparently all small, since they are described only as "Early Woodland," and "sand-tempered." One was check stamped. These materials may be related to the Badin series of Piedmont North Carolina,

[4] Clearly there is some disagreement regarding both the amount of erosion and the nature of soil development in the project area. While USDA erosion surveys indicate that this area was subjected to increasing erosion as a result of agricultural practices. Drucker is suggesting that soils were built-up instead. Certainly the presence of overlying soils supports Drucker's assessment.

Table 1.
Artifact Counts from the AF Consultants Survey of 38RD1082
(Adapted from Drucker 1997:Table 1)

	Points	Bifaces	Used Flakes	Flakes Q	Flakes QZ	Flakes M	Other	Sherds	Historic	Total
Surface	11	2	4	103		8	1	2	2	133
ST 1, PZ & Top Z.2		1	1	25	1	1				29
ST 2, PZ & Top Z.2				8		8	1			17
ST 3, PZ & Top Z.2				13		1	1			15
ST 4, PZ & Top Z.2				5						5
ST 5, PZ	1			21		3	1	1		27
Z.2		1	2	31	6		1			41
ST 6, PZ				5		3				8
Z.2			2	31		4				37
ST 7, PZ						1				1
Z.2				3		1				4
ST 8, PZ & Top Z.2				1					1	2
ST 11, Z. 2				1		3				4
ST 12, Z.2				1						1
ST 13, Z.2				1		1	3		1	6
Total	12	4	9	249	7	34	8	3	4	330

Q = quartz, QZ = quartzite, M = metavolcanic

although they may also be Deptford wares more characteristic of the South Carolina Coastal Plain. Regardless, these materials suggest that there was at least some activity during the Early Woodland.

In terms of boundary definition, the 13 shovel tests provided information, albeit limited, on most portions of the property. Shovel Tests 9 and 10, situated on a fairly steep slope off the ridgetop, produced no materials, suggesting that the steep slopes to the east and west are generally unproductive. Shovel Tests 7 and 8, at the extreme northern portion of the property, reveal very low densities of material, suggesting that while some remains are present in these areas, they are fairly far removed from the site core. In a similar manner, Shovel Tests 4, 11, and 12, situated on the west edge of the ridge, reveal very low densities and also appear to be at or near the site boundary.

This leaves Shovel Tests 1, 2, 3, 5, and 6 producing 174 of the 197 shovel test artifacts or 88%. And of these five shovel tests, two (Shovel Tests 5 and 6) have yielded 113 specimens — 57% of the total shovel test collection or 65% of the core concentration. Based on these data, it appears that the site core extends over much of the ridgetop, at least between the two concrete pads. Boundary definitions to the east are imprecise since, as Drucker notes, this property was owned by another individual and access was not granted to expand the survey (Drucker 1997:6). In general the site is thought to encompass an area measuring about 700 feet north-south by 400 feet east-west "at the 400 ft. contour of the ridge top" (Drucker 1997:8).

Curiously, however, both Drucker's management summary (letter to Mr. Dan Ligon dated September 29, 1997) and the updated site form (38RD1082 site form, South Carolina Institute of Archaeology and Anthropology, University of South Carolina) both specify that the site measures only 500 by 165 feet. In the management summary Drucker also specifies that:

> the focal area extends from the southeast property fence behind a small wooded shed to a point approximately 30 m (ft) [sic] east

> of the northernmost construction pad (Shovel Tests #1-#6, #13 and General Surface) (letter to Mr. Dan Ligon dated September 29, 1997).

The differences between the management summary and the final report are of importance since our work was based on the results as reported in the management summary — the only document available to us at the time.

Drucker notes that the site "appears to represent the remains of repeated Indian occupation" situated in an inter-riverine zone. She notes that although the site might have been "revisited over a period of several hundred to several thousand years," it "may contain intact evidence of habitation activities associated with Middle Archaic hunting, food processing, tool production/maintenance, and collection or processing of minerals and possibly non-game resources" (Drucker 1997:27).

Although not specifically itemized, Drucker seems to outline several research areas that are briefly presented here.

She specifically comments that one research topic is "delineation of base camp vs. mobile foraging activities and tool kits" since that would "help to clarify Middle to Late Woodland settlement patterns within the Twentyfive Mile Creek drainage area" (Drucker 1997:27).

Based on the posited "sub-plowzone integrity and the spatial distribution of materials" Drucker comments that:

> discrete intra-site work areas may be detected and that tool kits containing a variety of unifacial and bifacial tool types may be associated with one or more of the Archaic components of site occupation (Drucker 1997:27).

Because of the density of flakes and tools recovered from the site, she comments that:

> this site might provide evidence of technological changes in both bifacial and unifacial tool manufactures (Drucker 1997:27).

And finally, the presence of small quantities of extralocal hematite and soapstone, coupled with the use of local materials like quartz and metavolcanics suggests that the site:

> may shed further light on the function and meaning of these materials in the lives of Middle and Late Archaic hunters, as well as how resource selection and other economic strategies, such as trade, changed from the Late Archaic to the Mississippian periods in the Wateree River and Broad River watersheds (Drucker 1997:27).

Drucker concludes that the site is potentially eligible for inclusion on the National Register of Historic Places and recommended additional testing consisting of both dispersed 1-meter test units and a block excavation, associated with funding for OCR and radiocarbon dating (Drucker 1997:28).

The research questions presented are certainly ambitious and will be discussed in greater detail in a following section. Additional research topics have also been outlined by Sassaman and Anderson (1994), based on the Middle and Late Woodland context they developed for the South Carolina Department of Archives and History. Already alluded to questions regarding:

> ▪ *The typological association of the MALA point and especially its spread to other areas of South Carolina*. To address this question, of course, it would be necessary to identify a site with sealed contexts and large assemblages, similar to the original Pen Point site.

- *The typological significance of the Morrow Mountain I and II divisions.* To be able to address this question sites most not only possess fairly large numbers of these points, but there must also be assemblages of preforms, discarded points, and flakes, all securely associated with the points.

- *The temporal placement of the Morrow Mountain phase in South Carolina's Middle Archaic chronology.* This question demands, of course, the presence of sealed features capable of providing either radiometric or at least OCR dates.

Furthermore, they note that there is much variation in settlement at different Sandhill locations (Sassaman and Anderson 1994:148). Urging additional research, they note that it is essential to develop models that are appropriate for the specific locations being examined. It may, therefore, not be possible to fit 38RD1082 into an existing subsistence-settlement system. They also caution against the a priori belief that the sandhill environment is "marginal," urging that the questions, "marginal to whom?" and "marginal to what?" be carefully considered and addressed. While not explicitly stated, there is a presumption that sites capable of contributing detailed environmental and subsistence data are of special interest in the exploration of this question. Consequently, sites must possess, again, sealed deposits which can securely dated. Soils should be promising for the recovery pollen and features with ethnobotanical remains are critical for subsistence research.

Many of the research questions posed by Sassaman and Anderson (1994:183-192) are so broad as to be best addressed through comparison research incorporating either existing records or collections from multiple sites. Others are primarily methodological and are related to the techniques used to either identify or document Archaic sites. Some research topics, however, are clearly appropriate for individual site locations. For example:

- *What information about group size or duration of occupation can be determined from assemblages? Can special activity areas be identified within larger assemblages? Are structural remains present? Are the remains that are found the result of one or a few visits, numerous visits, or seasonal or year-round encampments?* To address these questions the authors note that block excavations are necessary, but they offer relatively little advice on the types of data sets required to address these questions (see Sassaman and Anderson 1994:190). Clearly sealed deposits that are relatively contemporaneous are necessary for many of the questions. Likewise, the probability of identifying features is critical for others. Mixed sites, sites lacking clear vertical and/or horizontal stratigraphy, and sites lacking features suitable for dating are not likely to produce the information necessary to address these research questions.

Taken together, these questions help define the context against which the data sets present at 38RD1082 must be compared to determine the site's ability to address significant research questions. Sassaman and Anderson, in a time prior to the refinement of National Register assessments offer some recommendations regarding sites which are clearly eligible. The features which mark eligible sites include:

(1) Intact buried deposits, particularly assemblages, yielding features or preserved floral and faunal remains. These sites provide the opportunity to refine

our knowledge of chronology, subsistence, and typology.

(2) Stratified deposits, with components that can be isolated horizontally or vertically. This would facilitate detailed examination of single periods of occupation.

(3) Any site yielding evidence for structural remains (i.e., post lines or arcs, pithouse-like features).

(4) Areally extensive surface scatters from plowzone or eroded upland context, particularly if evidence for artifact relocation beyond more than a few meters is minimal, or from large, dense sites in similar settings where shallow undisturbed deposits are present. Controlled surface collection (i.e., artifact piece plotting) as well as block unit excavations could recover discrete occupational episodes or activities areas on sites of this kind. The Windy Ridge site excavations (House and Wogaman 1978) are an example of a successful excavation of a site of this kind (Sassaman and Anderson 1994:199).

If this outline is reviewed carefully, it becomes apparent that many of the issues previously discussed (i.e., sealed deposits, intact features, clear stratigraphy, etc.) form the basis of their assessment process.

ARCHAEOLOGICAL TESTING

Methodology

With the information available in the letter management summary and after discussions with Mr. Niels Taylor, the SHPO Archaeologist, it was decided that the National Register eligibility of 38RD1082 could probably be determined through the excavation of two 5-foot units and several additional 2-foot units. Substantive issues guiding this decision were:

- the need to better determine the stratigraphy and depth of deposits at the site,
- the nature of the materials associated with the different stratigraphic levels,
- the prevalence and association of unusual materials such as soapstone, hematite, charcoal, and bone,
- the presence of features or concentrations of artifacts, and
- the nature of the deposits associated with the two concrete pads (where construction would totally eliminate access.

The two 5-foot units, placed within the pad areas, would allow the examination of all of these questions, while the smaller units would specifically help validate the results from the two 5-foot units as well as provide a larger sampling of data from across the site. Five-foot units were selected as the minimal size to eliminate potential contamination of deeper levels by materials from upper walls. In addition, 5-foot units seem also to be the minimal size to permit the ready identification of features. Smaller units were used as a supplement, recognizing that they would probably not allow the identification of features and, in spite of careful excavation, might still include some mixing of materials.

Upon arrival at the site it was clear that there had been extensive cutting, primarily on the crest of the ridge. Beginning at the southern edge of the project area (just north of a small shed) a dozer had been used to cut or remove about 1.0 to 1.5 feet of the ridge (Figure 6) and level the two pads. This cutting appeared to have been limited to the central area, with a clear bank about 0.5 to 1.0 foot in height along portions of the eastern site edge (Figure 7). The resulting soil was then spread over much of the remaining site area as fill (Figures 8 and 9). It was this extensive, albeit relatively shallow, disturbance which resulted in the site's discovery. Figure 10 reveals the extent of this disturbance, as well as the relationship of the various units and the site's original topography, prior to grading.

Test Pit 1 was placed in the southern half of the northern pad, toward the eastern edge (Figures 9 and 10). This was determined to be a cut area, but it appeared to be toward the northern edge of Drucker's site core. It was pushed to the eastern edge of the pad to ensure that it wasn't too close to the western fringe of the site, where artifact density, based on the shovel tests, declines rapidly.

Test Pit 2 was also placed toward the eastern edge of the southern pad, again to ensure that it was in the site core. A central-pad location was selected since Drucker's data seemed to suggest that this would be among the denser site areas (Figure 6 and 10).

Excavation of these units was by natural soil zones where apparent and elsewhere by levels 0.5 foot in depth. All soil was screened through ¼-inch mesh. Soil samples (about 1-quart in size)

Figure 6. Test Pit 2 in the southern pad. In the background (to the south) is where the cut began.

Figure 7. Eastern edge of the site, showing cut and fill sections. Back dirt to the left edge of the photograph is Test Pit 6.

Figure 8. Top of the ridge at 38RD1082 looking north. Test Pit 2 is being cleaned. Note the extensive site disturbance.

Figure 9. Cleaning Test Pit 2 in the northern pad area.

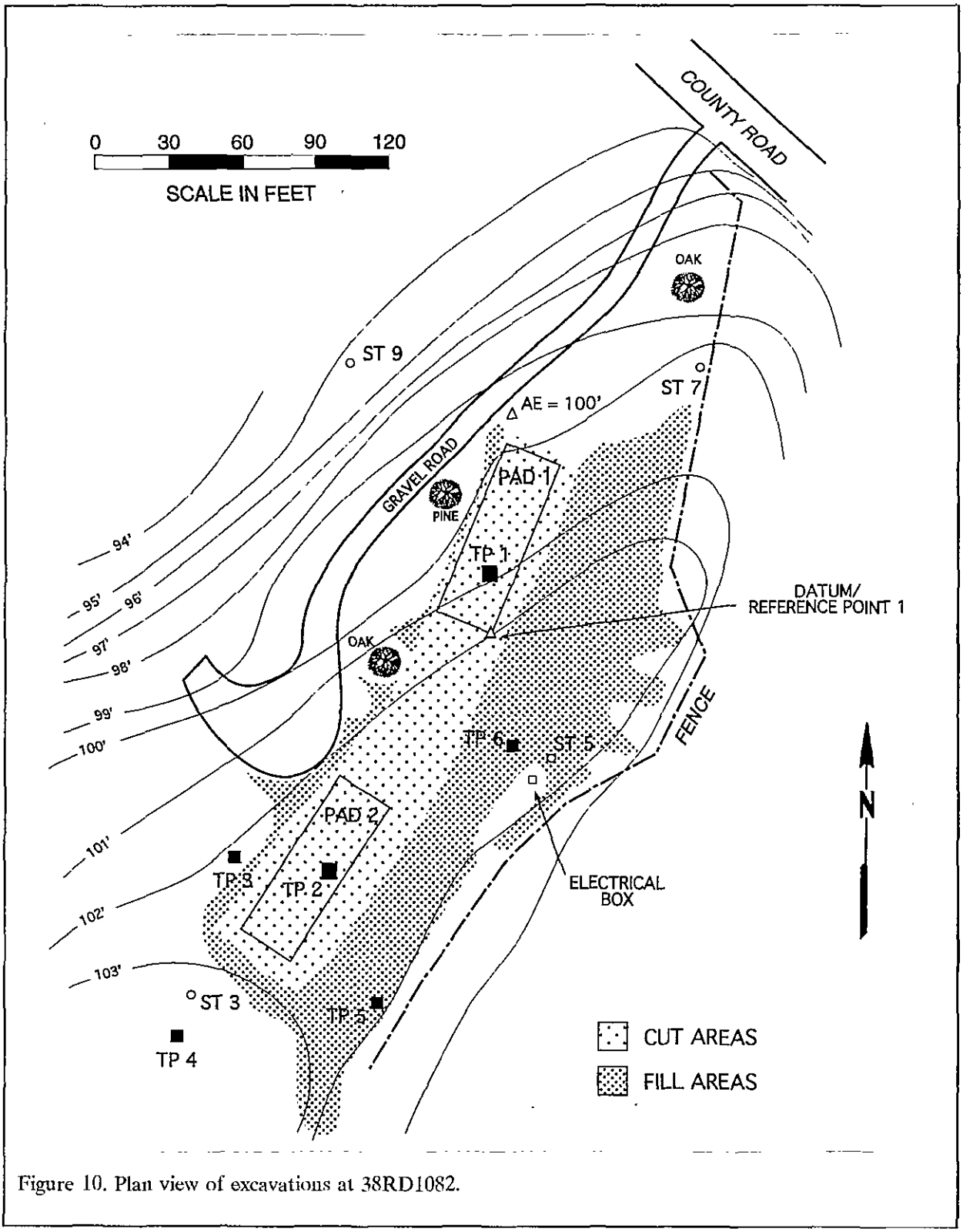

Figure 10. Plan view of excavations at 38RD1082.

were retained from each zone or level. At the conclusion of the excavation the unit was troweled, photographed, and drawn. These units were not backfilled, but were covered in plastic and surrounded by caution tape. This allowed them to be returned to, if necessary.

Test Pits 3 — 6 were all 2-foot squares, but were otherwise excavated in a similar fashion. The units were oriented north-south. The only major difference in technique was that these units employed Zone designations for natural soil lenses which were then further divided into 0.5 foot levels.

Test Pit 3 was placed at what we anticipated (correctly) to be the western edge of the site. Although not disturbed, relatively few artifacts were recovered and those found tended to occur at higher elevations. Test Pit 4 was placed outside the construction zone, in an area undisturbed by mechanical equipment. This unit provided a fairly intact site profile correlating well with those from Test Pits 1 and 2. Test Pits 5 and 6 were placed along the eastern edge of the site, in the posited site core, although also in areas which appeared to exhibit fill. These tests were designed to evaluate the nature of disturbance under the fill and also to determine how much is present. No excavations were placed north of Test Pit 6 since Drucker found the artifact density to decline in this direction and we felt that Test Pit 1 provided adequate information.

Each unit was tied into the overall site plan using a permanent datum located at the southeast corner of the northern concrete pad. Associated with the corner of the proposed building, this location is considered fairly permanent and provides vertical control. Horizontal control is provided by surface roots of a live oak tree painted orange and assigned an assumed elevation of 100 feet.

A topographic map was prepared of the site area (see Figure 10) to illustrate the nature of the ridgetop. Elevations fall rapidly to the north and west. The county road defines the northern nose of the ridge, with the ground continuing to slope to the north. The fenced area includes most of the ridge top to the east, although none of the slope is included. It seems likely, given the similar slope to the east as found to the west, that the site boundary is equally well defined in this area. To the south, however, the topography continues to rise slightly, dipping into a small swale to the southeast and then leveling off. It seems likely that the only boundary not well defined is that to the south, off the project site.

Examined in plan view it is also apparent that the grading on the ridgetop was limited to the area of the planned pads and was probably designed to create a fairly level area and grub out any surface vegetation that might cause settling problems for the concrete pads. The resulting fill was spread primarily to the east, with only small quantities distributed to the west.

The plowzone in the area of Test Pit 1 had apparently been stripped away and the upper 0.4 foot was a light yellowish brown (10YR6/4) sand, designated level 1. This overlaid 1.3 feet of reddish yellow (7.5YR6/6) sand excavated as levels 2, 3, and the upper portion of 4. At the base of the unit was a strong brown (7.5YR5/6) coarse sand that included clay lenses. As excavations continued across the site, this "orange" soil (see Figure 9) became an excellent indicator that the unit had reached sterile soil. No artifacts were ever found in these soils. During excavation of Test Pit 1 a tree stain was identified in the northeast quadrant, clearly visible within Level 1 and tapering toward the base of Level 4. This stain was filled with charcoal and was excavated separately from the remainder of the unit. When removed, it revealed very dense artifacts, suggesting that as the tree decomposed it allowed artifact bearing soils to migrate deeper in the profile.

Test Pit 2 likewise revealed that the plowzone had been stripped away, leaving only about 0.2 foot of olive brown (2.5Y4/4) sand designated level 1. Below this was 1.6 feet of a reddish yellow (7.5YR6/6) sand designed levels 2 and 3 (each of these levels was 0.6 in depth, rather than 0.5 as planned). The upper portion of level 4 included this reddish yellow sand but graded into a strong brown sand, identical to that found in Test Pit 1. Again, artifacts were not present in this

lower level. A vague tree stain, less well defined than that found in Test Pit 1, was encountered in the northeast corner of Test Pit 2. It contained a similar amount of charcoal in the upper levels and again tapered toward the base. This time, however, it was not separately excavated.

Test Pit 3 revealed a very thin A horizon, perhaps suggesting that this unit was on the edge of the site area that had been subjected to cultivation. Defined as Zone 1, consisting of a brown (7.5YR4/3) sand, it was only 0.25 foot in depth and overlaid a light yellowish brown (10YR6/4) sand 0.4 foot in depth and excavated as Zone 2. Below this was nearly 1.0 foot of reddish yellow (7.5YR6/6) sand excavated as Zone 3, levels 1 and 2. While more shallow, this corresponds to levels 2 and 3 in Test Pits 1 and 2. At the base of the unit was again a strong brown (7.5YR5/6) sand that, although only shallowly excavated, was sterile.

Test Pit 4 also exhibited a very shallow A horizon, again calling into question the extent of cultivation to the south of the ridge core. We identified 0.3 foot of brown (7.5YR4/3) sand designated Zone 1. This overlaid 0.4 foot of light yellowish brown (10YR6/4) sand designated Zone 2. Below was 1.6 foot of reddish yellow (7.5YR6/6) sand designated Zone 3 and excavated in three levels. At the base of the unit was the strong brown sand found elsewhere. Here 0.5 foot was excavated as Zone 4 with no materials being recovered.

For the most part Test Pit 5 was very similar to Test Pit 4, except that it included nearly 0.9 foot of mottled fill. This fill was excavated and screened, but it produced relatively few remains. Below it was slightly over 0.3 foot of Zone 1 soils — a dark brown (7.5YR3/4) loamy sand more characteristic of plowed soil except for its very shallow depth. Zone 2 was 0.4 foot of light yellowish brown (10YR6/4) sand overlying 1.3 foot of reddish yellow (7.5YR6/6) sand taken out as Zone 3, levels 1-3 (levels 1 and 2 were both 0.5 foot in depth, while level 3 was only 0.3 foot). Below it laid Zone 4, a strong brown sand (which was excavated for 0.3 foot).

The final unit, Test Pit 6, revealed 0.4 foot of fill similar to that found in the Test Pit 5. Under it were 0.2 foot of dark brown sand, suggesting that the grading may have stripped some of the A horizon then redeposited fill — a situation not uncommon in grading operations. Below Zone 1 was 0.3 foot of light yellowish brown (10YR6/4) sand excavated as Zone 2. Zone 3, taken out in four levels, was reddish yellow (7.5YR6/6) sand 1.8 foot in depth. At the base of the unit was, again, strong brown sand.

Findings

Laboratory Methods

As previously mentioned, the cleaning of artifacts and cataloging of the specimens was conducted at Chicora laboratories in Columbia immediately following the field investigations. The materials have been curated at the South Carolina Institute of Archaeology and Anthropology and have been cataloged using that institution's accessioning practices. No specimens were identified which required conservation or stabilization. Specimens were packed in plastic bags and boxed. Field notes were prepared on pH neutral, alkaline buffered paper and photographic materials were processed to archival standards. All field notes, with archival copies, will also be curated with this facility.

Two primary materials were identified in the lithic collections. One was quartz, which was usually a translucent white, but occasionally reddish (so called rose-quartz), grayish, yellowish-brown, or clear (quartz crystal). This material is found throughout the Carolina Piedmont and might have been obtained from either veins or as cobbles in Piedmont river gravels. The other common material was classified simply as metavolcanic, meaning partially metamorphosed volcanic rocks. This might include flow banded rhyolite, porphyritic rhyolite, plain rhyolite, felsic tuff, welded vitric tuff or breccia tuff. The only other material found any frequency was quartzite also called by orthoquartzite by some researchers. This material is typically a light brown to white and has been characterized as a chalcedony cemented quartz arenite by one researcher (Anderson et al.

1982). It probably originated from Coastal Plain outcrops and, as a result, may be considered an extralocal or exotic material.

Debitage categories included primary (defined as flakes with 90% or more cortex), secondary (defined as having 1% to 90% cortex), interior (defined as having no cortex). These categories, widely used, are briefly explained by Yohe (1996:54-56). More refined categories, where they are used, follow the definitions offered by Blanton et al. (1986), Oliver et al. (1986), and Yohe (1996).

Fire cracked rock, typically considered the result of "hot rock" cooking in earth ovens or by stone boiling, may also simply represent hearth remains. They are typically characterized by reddening and/or cracking of cortex-bearing river cobbles, frequently quartz. Nevertheless, it is at times difficult to distinguish such materials from naturally occurring rock. Furthermore, House and Wogaman noted years ago that, "it is very difficult, even in the laboratory, to distinguish heat-induced cracking and discoloration of weathered rocks" (House and Wogaman 1978:58).

Shatter is often called chunks by other researchers. Either term is typically applied to angular pieces of debitage of various sizes. They lack observable striking platforms, dorsal and ventral faces, or other characteristics of flakes. These items are often, although not always blocky and angular. Shatter is thought to have been produced in greatest numbers in the very earliest stages of tool production.

Hammerstones are typically large, rounded pieces of rock with observable areas of battering or cortex damage. They were probably used for percussion knapping, although other functions are entirely possible.

Points, also called hafted bifaces by some, are symmetrical, pointed bifaces which are modified for hafting. The diagnostic lithic remains were compared to published typological descriptions for the various projectile points such as Coe (1952, 1964), Oliver (1981), and South (1959). Items which can not be securely identified because of damage or which lack the often definitive basal sections are classified simply as bifaces.

At the testing level tools are defined very simply, being placed in broad morphological categories. Our laboratory methods, for example, define a biface as an artifact with flakes removed on both sides (not distinguishing between preforms, early stage reductions, and so forth); a core is a piece of raw material from which flakes have been removed; an end scraper is a blade tool with at least one convex end which exhibits a steep angle; a used flake is a chip of stone that was used as a tool, exhibiting edge damage or wear; and a side scraper is a flake tool in which one of the long edges was retouched to serve as the scraping edge. These definitions generally follow those provided by Yohe (1996).

Pottery examples were compared to typological descriptions provided by Coe (1964) for the North Carolina Piedmont. They were also compared to the type descriptions offered by Anderson et al. (1982) for the South Carolina Coastal Plain, as well as research by others, such as Blanton et al. (1986) and Ward (1983).

Soils and Stratigraphy

Although the depths of the different soil zones varies and while there are topographic differences in the elevations, each excavation revealed a very similar profile — brown or dark brown sands from the A horizon overlaid reddish yellow sands. At the base of each excavation we found strong brown sand (what most people might characterize as "orange" sand). These similarities are revealed in Figure 11, while Figures 12 and 13 illustrates the profiles from Test Pits 1 and 2.

The percentage of sand, silt, and clay was determined for each of the four levels excavated in Test Pit 1 and the results are shown in Table 2. While no more sophisticated tests (such as determining the nature or size of the sand grains, the soils do tend to get more sandy with depth. While the silt content varies, the proportion of clay clearly decreases.

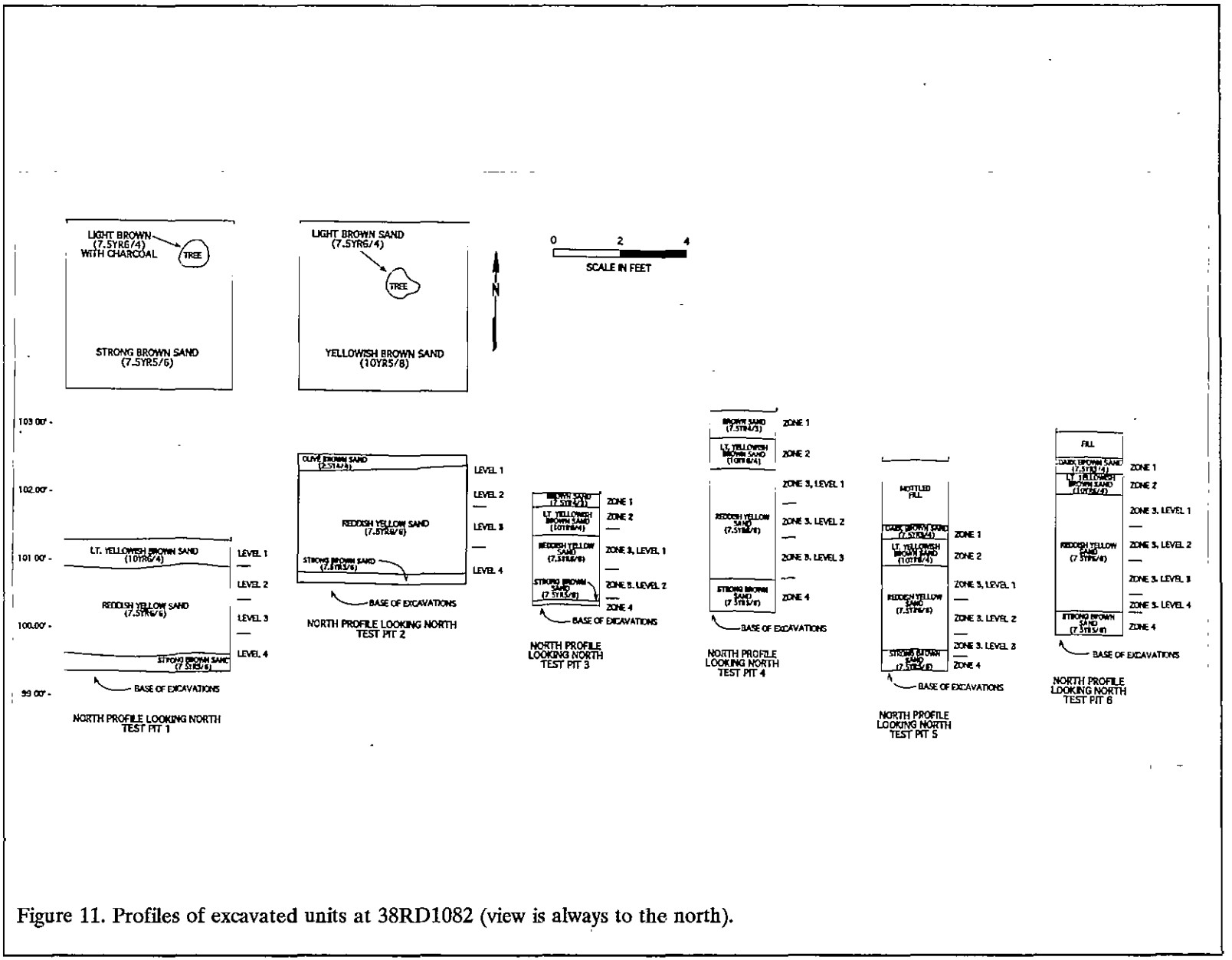

Figure 11. Profiles of excavated units at 38RD1082 (view is always to the north).

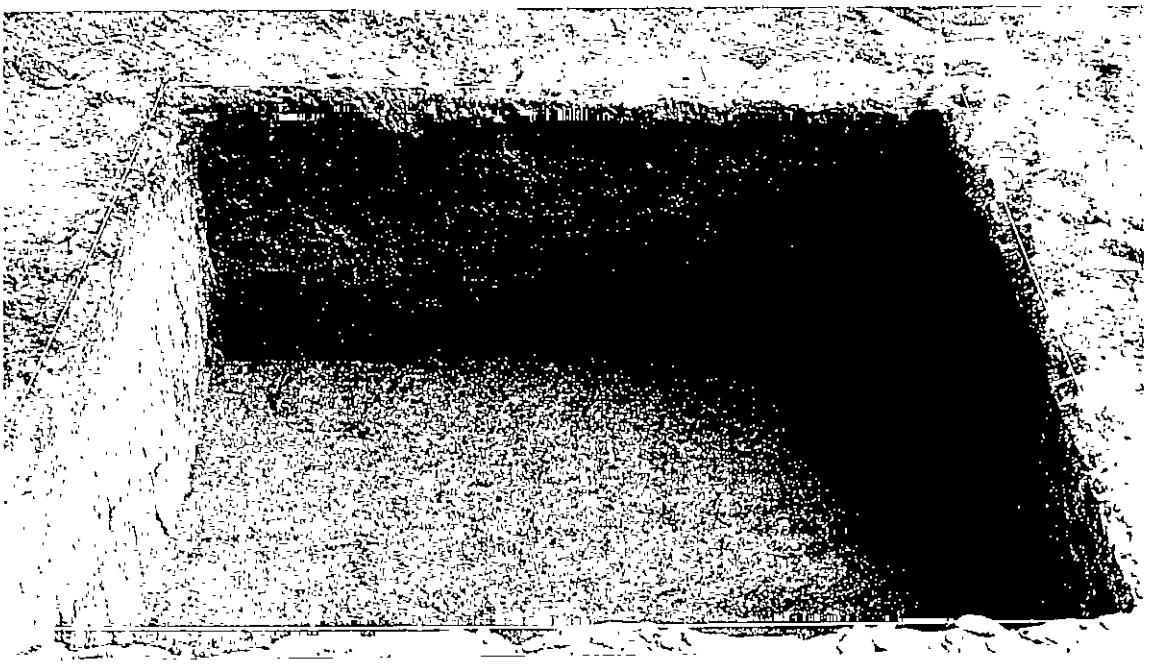

Figure 12. Test Pit 1 excavated, view to the east.

Figure 13. Test Pit 2 excavated, view to the east.

Table 2.
Sand, Silt and Clay Content (by %)
of Soils in Test Pit 1

	Lv 1	Lv 2	Lv 3	Lv 4
sand	66.7	73.3	66.7	86.7
silt	10.0	3.3	16.7	5.0
clay	23.3	23.4	16.6	8.3

When the different strata are compared with the quantities of materials recovered (excluding items in the fill) the bulk of the materials are found consistently in the same two levels in all units except one, Test Pit 4 at the south end of the site. The uniformity of recovery elsewhere on the site suggests that as one moves further south on the ridge different soil conditions begin to dominate and materials may be even more deeply buried than they are in the project area (although clearly additional work would need to be conducted to determine this any certainty).

These data reveal that while materials are occasionally found to depths of 70 centimeters (2.1 feet) as reported by Drucker, the bulk of the materials are pretty consistently within the 40 to 50 centimeters (1.5 feet) (Table 3). The minor variations seen in the table may simply be the result of undulations in the aboriginal soil, variations in the amount of bioturbation, unrecognized tree stains, errors in the excavation of the different levels, or perhaps even random bias. The point that is most significant, it seems, is not that there is variation, but rather that throughout the site there is so much uniformity.

The soil zone in which the bulk of the materials were recovered has no special appearance and is not visually distinct from those above or below. In general, this zone is the upper portion of the "yellow" and lying immediately below the "light brown" sand of the A horizon. Cultural materials, as previously discussed, terminate prior to the "orange" sand found consistently in this study.

The only "features" encountered were natural — tree stains were found in both 5-foot units, probably relics of the earlier woods which covered the site area. Charcoal is locally abundant, but is particularly associated with these tree stains. It seems likely that some, perhaps much, is naturally occurring, either as the burning of "lighter-wood" tree roots or as forest fire debris. Examination of selected hand collected samples from the site reveal all to be wood charcoal, with *Pinus* sp. being the only identifiable species. No hickory or acorn shell was identified nor were other wood types recognized in the samples collected.

The excavations failed to identify concentrations of artifacts which might have marked the location of thoroughly leached features. Nor were concentrations of fire cracked rock observed in the study. Instead, the slightly reddened, crizzled, and broken quartz was found fairly uniformly spread throughout the artifact bearing-zone.

Table 3.
Materials Recovered by Depth, Expressed in percent
(based on correlation of zones and levels)

	TP 1	TP 2	TP 3	TP 4	TP 5	TP 6
Z. 1			0.0	1.9	8.8	1.3
Z. 2			**33.3**	5.8	14.7	7.7
Z. 3, Lv. 1	**41.6**	***49.1***	***50.0***	19.4	**32.4**	***52.9***
Z. 3, Lv. 2	***54.5***	**36.5**	16.7	**33.0**	***44.1***	**32.3**
Z. 3, Lv. 3	0.3	13.4	0.0	***39.8***	0.0	5.8
Z. 4	0.0	1.0	0.0	0.0	0.0	0.0

Artifacts

The most abundant artifacts recovered from the excavations are flakes (n=656), followed by shatter (n=397) and fire cracked rock (n=154). In contrast, tools account for only 31 specimens (Table 4).

These tools include 12 projectile points (10 of which were recovered from Test Pit 2), 16 bifaces (12 of which were recovered from Test Pit 2), one hammerstone, and two used flakes.

Table 4.
Artifacts Recovered from 38RD1082

Provenience	CSPP	Bifice	HS	Used Flake	Core	Quartz Flakes P	Quartz Flakes S	Quartz Flakes I	Metavolcanic Flakes P	Metavolcanic Flakes S	Metavolcanic Flakes I	Other Flakes P	Other Flakes S	Other Flakes I	Shatter Q	Shatter M	Shatter Qt	FCR	H	S	Bone
TP1, L1	1	2		1			22	79		4	14			3	23	4	2	3			
L2		1		1			3	21		2	18				3						
L2, tree		1			1		3	1		2	1				1						
L3											1										
L3, tree							1			1					2			1			
TP2, L1	4	6					33	125		18	52		1	4	34	29	1	9		5	7
L2	6	5	1			10	12	26		2	22	1			96	23		33	1		
L3		1				4		15	1	1	12			1	39	7	1	4			1
L4								2			1				4						
TP3, Z2							1	1													
Z3, L1															3						
Z3, L2								1													
TP4, Z1							1	1													
Z2								4							2						
Z3, L1							2	8							10			7			
Z3, L2						1	5	8			1				17			2			
Z3, L3						1	7	14			1				17		1				
TP5, Z1															3						
Z2								2										3	1		
Z3, L1								2			1					1		7	2		
Z3, L2							2	3							3			5			
TP6, Fill								3									1				
Z1											1				1						
Z2						2					2				6	2					
Z3, L1	1						10	10		2	11				23	12		13			2
Z3, L2						1		8		2	14				6	15	1	3	1		2
Z3, L3											5				4						
Surface																				3	
Totals	12	16	1	2	1	19	101	334	1	34	157	1	1	8	297	93	7	90	5	8	12

CSPP = chipped stone projectile point; H = hammerstone; Flakes: P = primary, S = secondary, I = interior; Shatter: Q = quartz, M = metavolcanic, Qt = quartzite; FCR = fire cracked rock; H = hematite; S = sherds

The projectile points include one Taylor point (Michie 1966), one Kirk Corner-Notched (Coe 1964:69-70), seven Morrow Mountain Stemmed points (Coe 1964:37-43), two Savannah River Stemmed points (Coe 1964:44-45), and one Small Savannah River Stemmed (Oliver 1981:151-154). These points, illustrated in Figure 14 with brief metric attributes itemized in Table 5, closely follow recognized types.

The Taylor point, the only specimen made from Coastal Plain chert, falls in the mid-range of previous specimens. It includes the attributes of alternate beveling, basal grinding, squared ears, and well-defined side-notches. The specimen, unfortunately provides no additional clues concerning the dating of this poorly defined type, although Michie (1992:223) notes similarities with the Bolen points of Florida and the Big Sandy points of Alabama and Tennessee.

Table 5.
Projectile Points Recovered from 38RD1082
(measurements in mm)

Type	Provenience	Material	Length	Width	Thickness
Taylor	TP 2, Lv 2	C	40	17	5
Kirk Corner-Notched	TP 6, Z 3, Lv 1	M	?	26	8
Morrow Mountain I	TP 2, Lv 1	Q	44	24	12
Morrow Mountain II	TP 2, Lv 1	Q	29	19	5
Morrow Mountain I	TP 2, Lv 2	Q	50	26	9
Morrow Mountain I	TP 2, Lv 2	Q	38	26	6
Morrow Mountain I	TP 2, Lv 2	Q	53	30	10
Morrow Mountain I	TP 2, Lv 2	Q	43	26	11
Morrow Mountain II	TP 2, Lv 2	Q	45	26	12
Savannah River Stemmed	TP 2, Lv 1	M	?	46	10
Savannah River Stemmed	TP 2, Lv 1	M	?	39	7
Small Savannah River Stem	TP 1, Lv 1	M	53	24	7

Q = quartz, M = metavolcanic; C = chert

The single Kirk Corner-Notched point recovered from the site falls well within Coe's size range and is made of metavolcanic material. Given the insecure dating of the Taylor point, this is the oldest point recovered from these excavations, dating to perhaps 8000 B.P.

One of the first attributes noticed about the seven Morrow Mountain points recovered from 38RD1082 is that all are manufactured from quartz. In addition, Coe's Morrow Mountain I points are considerably more common than the long tapered stem variety. One of the Morrow Mountain II points is somewhat unusual in its small size — only 28 mm in length. This is just under Coe's minimum length of 30 mm, but the width to length ratio of 1:1.5 is within his original definition (Coe 1964:37). While this is a small specimen, it appears to otherwise fall within the Morrow Mountain definition.

Just as quartz was apparently the material of choice for the makers of the Morrow Mountain points, metavolcanics were consistently selected by the Native Americans producing the Savannah River Stemmed and Small Savannah River Stemmed points at 38RD1082. Although none of the points are intact, the two Savannah River Stemmed points appear to be at small end of Coe's type description. One specimen exhibits an incurvate base, while the other possesses a straight base. The diminutive Small Savannah River Stemmed variety is within the size range proposed by Oliver and is in all respects typical of this type.

The sixteen bifaces recovered from the testing include nine tips, several of which are likely from finished points. Without diagnostic bases, however, these cannot be reliably identified and are included in the biface category. One of the nine is a gray chert, two are metavolcanic, while the remaining six are quartz. There are also seven intact bifaces, five of which are quartz, while two are of metavolcanic material.

The two used flakes present in the collection are both quartz and are worked on only one face. The one quartz hammerstone measures about 53 by 52 by 23 mm and exhibits extensive wear.

When all of the flaked tools are taken

Figure 14. Examples of lithics and pottery recovered from 38RD1082. A, Kirk Corner-Notched; B, Taylor point; C-I, Morrow Mountain Stemmed; J-K, Savannah River Stemmed; L, Small Savannah River Stemmed; M, hammerstone; N, Badin Check Stamped; O, Yadkin Check Stamped; P, Yadkin Cord Marked.

together and characterized only by raw material, 20 (66.7%) of the 30 specimens are made of quartz, eight (26.7%) are made of metavolcanics, and two (6.6%) are made of chert. Although the projectile points *suggest* that this reliance on quartz may have temporal significance at 38RD1082, this cannot be determined from the information available.

Curiously, when the flake collection is examined a very similar breakdown of quartz (69.2%), metavolcanics (29.3%), and other material (1.5%) is revealed. Even the shatter closely follows this pattern, with 74.8% of the shatter being quartz, 23.4% being metavolcanics, and 1.8% being other material (entirely quartzite). It seems, therefore, that at least in a general sense, the projectile points can be correlated with the lithic debris at the site, revealing a fairly intensive Morrow Mountain occupation relying heavily on quartz. It is, however, important to express some caution since Drucker's earlier work revealed MALA, Late Archaic, and Woodland points, all made from quartz (Drucker 1997:Table 1).

Perhaps more interesting, however, is the large quantity of interior flakes, comprising 73.6% of the quartz specimens and 81.8% of the metavolcanic materials. The next most common are the secondary flakes — 22.2% of the quartz and 17.7% of the metavolcanic. Primary flakes account for a very small proportion of the collection — 4.2% of the quartz and only 0.5%of the metavolcanic.

In general, researchers see a continuum between very a very high proportion of primary flakes and a very high number of interior flakes. When primary flakes are common (perhaps around 25%) and there are a number of early-stage bifaces, it is generally though that the site exhibits quarrying activity involving the reduction of raw materials. At the other end of the continuum are sites with few primary flakes, but large numbers of interior flakes coupled with late-stage bifaces or finished projectile points exhibiting varying stages of wear and resharpening (as is the case at 38RD1082). Bifaces were likely brought to such sites either finished or nearly finished.

Site 38RD1082 also yielded a fairly robust collection of shatter — 397 fragments. These materials include angular waste that is often (although not exclusively) produced during the early stages of reduction. Again quartz is the most common material, accounting for 74.8% of the assemblage.

This collection of flakes might suggest the site was used both for finishing bifaces into tools, as well as resharpening or maintaining existing tool forms. The seemingly large amount of shatter, however, may be the result of reliance on quartz, which often has only modest working characteristics. The low incidence of primary flakes, the recovery of only one hammerstone, the failure to identify a number of preforms, and the extensive reworking of recovered projectile points suggests that this site was primarily oriented toward maintenance.

The sherds from excavated contexts at the site are all small and include one unidentifiable sherds, one Yadkin Cord Marked and one Yadkin Check Stamped. From the surface of the site three Yadkin Check Stamped sherds were recovered. There is considerable variation in the paste, although much of this variation is likely the result of the very small sample size (only four analyzable sherds). The aplastics were all identified as either quartz or an unidentified white material. Size range from fine to coarse and all four sherds had a variety of aplastic sizes present. Two sherds included fine and medium sand, one included fine and coarse inclusions, and the fourth contained only fine and medium sand (somewhat reminiscent of the Badin series). Two of the sherds included subangular quartz coupled with rounded inclusions. One specimen included both subangular and angular sand grains, while the fourth included a range of rounded, subangular, and angular materials.

These materials likely reveal the range of variation that might be expected if a large collection were available. All of the materials appear to resemble other collections classified as Yadkin, although as Anderson suggested years ago, a type-variety approach is probably more reasonable (see Anderson 1982 and Trinkley et al.

1993:90-93). The one sherd that is somewhat similar to Badin may, in fact, represent an early assemblage (see, for example, Trinkley et al. 1993:93-97). Obviously, the collection from 38RD1082 is simply too small to provide any real assistance in better understanding the muddled ceramic typology of the Carolina Fall Line.

The last item worthy of at least brief mention are the 12 fragments of calcined bone recovered from the excavations. Found in only two units, the remains suggest that faunal material was once present on the site, but is today preserved only when the bone was thoroughly burned. The effects of acidic soils, rapid leaching, and depositional factors all appear to have mitigated against faunal materials being preserved unless calcined. What appear to be mammal remains dominate the collection, at least partially because their larger and denser bones are more likely to survive than those of fish, reptiles, amphibians, or birds.

CONCLUSIONS

Site Evaluation

The mechanism for the evaluation of 38RD1082 has been previously discussed at length (see pages 5 and 6). Briefly, it involves (1) identifying the site's data sets, (2) identifying the historic context applicable to the site, (3) identifying significant research questions the site *might* be able to address, (4) evaluating the site's integrity in order to determine if it can, in fact, address the proposed research questions, and (5) identifying truly significant research questions among all of the questions the site can, in fact, address.

The previous chapter has just outlined the data sets present (and not present) at the site. We have, for example, recovered relatively large quantities of lithics, including tools. Tools are limited primarily to projectile points, although very small quantities of hammerstones, used flakes, and bifaces are also present. Also present, but in greatly reduced numbers, are items such as hematite and ceramics. Features were not identified, nor was any vertical stratigraphy found at the site. Faunal material, while present in very low quantities, is entirely calcined, dramatically limiting its interpretative potential. Ethnobotanical remains were not found in secure contexts, but appear to be randomly distributed and perhaps reflecting natural occurrences.

Although the site has produced a number of artifacts, the data sets themselves are somewhat sparse. The fairly narrow range of tools calls into question the site's ability to shed much light on "intra-site work area" as suggested by Drucker (1997:27). It is also unlikely (coupled with the absence of chronological control discussed below) that the data sets are sufficient to address the technological changes Drucker (1997:27) mentions.

The data sets (i.e., assemblage of MALA points) are not present for the typological study of this intriguing type — one of the Middle Archaic primary research issues proposed by Sassaman and Anderson (1994).

Although this study synthesizes the Archaic Period, providing a generalized context for the data present at the site (pages 15-18), the reader is also referred to the excellent study produced by Sassaman and Anderson (1994) which is intended precisely as a context for cultural resource management investigations such as this. Contributing to this context, of course, is the environmental background research, especially that appropriate for the Middle Archaic (see pages 11-12).

In a similar fashion, this study has isolated a range of research questions appropriate for Middle Archaic sites such as 38RD1082 (see pages 22-24). These include a broad range of issues explored by other investigators at other Archaic sites in primarily North Carolina, South Carolina, and Georgia. Also included are questions generally suggested as appropriate by Drucker (1997), as well as generalized issues reviewed by Sassaman and Anderson (1994).

This review has, it is hoped, weeded out insignificant research questions, so that the fifth step in the process is not necessary. What does remain, however, is determining whether 38RD1082 has the integrity and data sets necessary to address the research questions that have been proposed. If the site has the integrity and data sets to address the research questions, then it should be considered eligible. Otherwise, it must be recommended not eligible.

Virtually all of the research questions proposed require that the site exhibit clear vertical, or at least horizontal, separation of different cultural remains. For example, it is not possible to explore the use of raw materials or technological innovations by the makers of Morrow Mountain

tools, if it isn't possible to segregate those remains from earlier and later deposits. Nor is it possible to explore the differences in the Morrow Mountain I and II points if we can't identify with any degree of certainty the associated assemblages. At 38RD1082 we have been unable to identify such clear stratigraphic separation. In fact, it appears that about 6,000 years of occupation are confined to a foot of soil. These excavations have found Taylor, Morrow Mountain, and Savannah River Stemmed materials commingled. Previous work suggests that the amount of mixing may be even greater, with the presence of both Guilford and perhaps Woodland materials also being found in this same one-foot deposit.

Even horizontal stratigraphy is not well defined at the site. For example, while Test Pit 1 contained several diagnostic Morrow Mountain tools, the same unit also produced Savannah River materials. Test Pit 2, which contained five Morrow Mountain points within a single level, also produced a Taylor point. Test Pit 6, which contained only one diagnostic — a Kirk — also reveals an assemblage of flakes that is strikingly similar to those found associated with the Middle Woodland Morrow Mountain points.

Many of the research questions demand the identification of features. Such sealed deposits are essential for radiometric dating and are very important for other research, such as the investigation of the hematite and soapstone on the site. In fact, features can often be a satisfactory replacement for clear stratigraphy. Unfortunately, at 38RD1082, we were unable to identify any evidence of features. While it remains *possible* that leached features might be recognizable through extensive piece plotting of artifacts or perhaps even fire cracked rock, this seems unlikely given that cultural materials are confined to so shallow a lens at the site. If features are present they much be either very shallow or widely dispersed. Both present additional problems in recognition and interpretation.

Turning to the critical issues of integrity outlined by Sassaman and Anderson (1994:199) we find (1) intact buried deposits, particularly those with features and preserved floral and faunal remains, (2) stratified deposits, (3) evidence of structural remains, and (4) areally extensive scatters with evidence of little movement. Site 38RD1082 does not appear to meet any of these criteria.

While the deposits are perhaps intact in one sense, there is also evidence of very long periods of occupation being confined to a fairly thin zone in the soil profile. There has been, as a result, considerable mixing of the deposits. Perhaps of even greater importance, the faunal remains are limited to small fragments of calcined mammal bone that offers relatively little information. Ethnobotanical remains seem limited to wood charcoal and cannot be convincingly associated with cultural deposits. There are clearly no stratified remains at 38RD1082. Nor was any evidence of structural remains found in the testing. Finally, there was little exposed at 38RD1082 prior to the grading. Today the site has been so extensively collected and the soils have been so thoroughly mixed that a controlled surface collection would produce only spurious information.

Recommendations

As a result of this evaluative process, we recommend 38RD1082 as not eligible for inclusion on the National Register of Historic Places. The recommendation, of course, must be independently evaluated by the lead federal agency in consultation with the State Historic Preservation Office. If our recommendation is accepted, then no additional management activities are required at the site and construction may continue as originally proposed.

We caution all parties concerned that our evaluation is appropriate *only to that portion of 38RD1082 which has been subjected to survey and testing*. In other words, we have reason to believe that 38RD1082 may extend slightly to the east and almost certainly further to the south. These areas have not be included in either the original survey or the site testing since they are owned by a different property owner and are outside the project area.

It is possible that the remains on these portions of the site exhibit different characteristics. Stratigraphy may be present because of different soil or deposition conditions. The assemblage may be entirely different, representing a single component site. It is important that the findings in the project area *not* be extended to areas not investigated.

While unlikely, it is also possible that additional, unsuspected, materials may be found as construction progresses. If so, the contractor should notify his archaeologist or the State Historic Preservation Officer. That additional materials will be encountered seems unlikely since the bulk of the land modification activities have already been conducted. Those construction activities which remain are likely to open large areas or disturb much additional intact ground. Nevertheless, we hope that the exceptional sensitivity shown by the developer will continue and care will be exercised.

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